SI REVIEW SHEET

SITE: Bayonne Barrel & Drum Co. AKA: _____

CITY: Newark COUNTY: Essex

DATE SAMPLED: FROM 1984 TO 1988 EPA ID #: NJD 009871401

SITE LEAD: EPA Surveillance & Monitoring Branch SITE CONTACT Mike Ferriola

SAMPLE MATRIX (# SAMPLES)		BACKGROUND SAMPLE (Y,N)	* SAMPLE PARAMETERS	QA/QC REVIEW (Y,N)
SOIL > 75	OFF SITE	No	PP+40, VO+15, PCB's, PHC, metals	No
GW 5	UPGRADIENT	Yes	PP+40, PCB's, PHC, ~~Semivolatiles~~	No
SW ____	UPSTREAM	____	____	____

COMMENTS: _____

REVIEWER: EQ Maven DATE: _____

* SPECIFY SAMPLE PARAMETERS: PP+40, VO SCAN, METALS, ETC.

SITE INSPECTION REVIEW

BAYONNE BARREL AND DRUM CO.
154 RAYMOND BLVD.
NEWARK, ESSEX COUNTY, N.J.
EPA ID # NJD009871401

GENERAL INFORMATION AND SITE HISTORY

Bayonne Barrel and Drum Co. is an inactive facility located in an industrial area of Newark, bordered by Route 1 and 9 to the west, the New Jersey Turnpike to the east, and an empty lot previously occupied by the Newark drive-in movie theater to the south. The site covers approximately 15 acres and consists of three main buildings and a large yard area. Most of the site is in Block 5002 Lot 3 (9.3 acres) and is owned by Bayonne Barrel and Drum Co. Block 5002 Lot 14 (5.5 acres) is owned by Frank Langella, principal owner of BBD, and is used as part of the facility for drum storage.

Bayonne Barrel and Drum Co. operated a drum reconditioning facility at the site from the early 1940's until about 1982 when the company filed for bankruptcy. According to NJ Department of State records, Bayonne Barrel and Drum Co. incorporated in 1937 under the name of Export Barrel Co. The name was changed to Bayonne Barrel and Drum Co. in 1942. Property deed records for Essex County indicate a history of site ownership as follows:

Bayonne Barrel and Drum Co.	1945 - present
Colville Bros. Inc.	1933 - 1945
Barbara and Henry Smith	1931 - 1933
B & F Co. Inc.	Prior to 1931

N.J. Department of State records indicate that B & F Co. incorporated in 1931 and dissolved in 1935; Colville Bros. incorporated in 1933 and dissolved in 1945.

Sanborn fire insurance maps show a drum reconditioning facility at the site as early as 1931, owned by B & F Co. Inc. The buildings present at the site were labeled as "tenant occupied" and included crate and drum storage, and drum cleaning areas. A review of aerial photography was conducted in 1986 by Louis Berger and Associates, a consultant for the N.J. Turnpike Authority which is proposing to construct a right-of-way over a portion of the BBD property. The following areas of potential environmental concern were noted:

1947 - landfill activity in the southern portion of the site.
- lagoon near eastern site boundary.
- drainage channels connecting lagoon to Passaic River.
- large open storage area containing several thousand drums.

1959 - N.J. Turnpike construction near eastern site boundary.
- liquid filled trench near old lagoon location.
- small waste disposal area in northeast corner of site.

1985 - dark ground staining along eastern site boundary.
- large mound of dark material (ash) near western edge of site.
- lagoon and waste disposal areas no longer evident.

Currently, the site contains several buildings, an incinerator, above-ground and underground storage tanks, an ash/sludge pile and an empty drum storage area (30,000 drums estimated). Since BBD filed for bankruptcy a portion of the site has been leased and used to repair and maintain trailers and cargo containers. A one-acre parcel near the northern boundary is reportedly leased to Nationwide Tire and contains a pile of used automobile tires.

SITE OPERATIONS OF CONCERN

Operations at the BBD facility involved both closed head and open head drums. The closed head system employed chains and caustic solution to remove residues in the drums. Spent solution from the process drained through an oil/water separator trench into a 5,000-gallon underground tank, and then was pumped into a 60,000-gallon above-ground holding/settling tank prior to being discharged to the sewer under a permit with the Passaic Valley Sewage Commission. Open head drums were placed on a conveyer and processed through the incinerator with residue from the process collected in two subsurface holding/settling tanks, and then placed into a dumpster/trailer prior to being manifested off-site.

Past inspections by NJDEP representatives during 1982 and 1984 reported the following items:

- 40,000 pounds per month of incinerator ash and sludge generated at the facility, most of which was being sent to S & W Waste in Kearny, N.J.; a lesser amount was disposed of at GROWS Landfill in Morrisville, Pa.

- wastewater overflow from the 5,000-gallon tank was observed entering a storm sewer as a result of a frozen pump and broken lines to the tank; the storm sewer reportedly flows to a small creek leading to the Passaic River.

- oil staining on ground surface near the above-ground tank.

- ash/sludge material on ground surface around incinerator.

- ash/sludge pile (220' x 50' x 4') on ground in rear of property, uncovered with no containment or runoff control.

- approximately 30,000 drums stacked on ground in rear of property; a random survey indicated about half of the drums contained some amount of material.

The ash pile and rows of drums (30,000 estimated) still remain in the rear of the property. The plastic cover over the ash pile is in poor condition , leaving the pile partially uncovered. In addition, a RCRA enforcement inspection conducted by EPA during June 1988 noted a large ash pile and 100-150 drums containing ash and aqueous materials in a building near the incinerator. There is also an ash pile in the courtyard between the incinerator and furnace room building.

A NJPDES-DGW permit (NJ 0064068) was issued to Bayonne Barrel and Drum Co. and several adjacent property owners in order to monitor groundwater in the vicinity of an old landfill area which was reportedly active prior to 1947, known as the 15E sanitary landfill. The landfill covers approximately 45

acres and received construction and demolition debris. It is located in the area between Foundry Street and Raymond Blvd. and encompassed the southern portion of the BBD site and the former drive-in movie theater to the south. The permit was issued 2/15/88 and includes 13 groundwater monitoring wells.

GROUNDWATER ROUTE

A soil and groundwater characterization report for the BBD site was submitted by Dan Raviv Associates in July 1986. The report contains soil and groundwater sampling data and information on site geology and groundwater conditions. Soil and well boring data indicate that the site is underlain by the following materials:

- black coal-cinder fill material:	0-10 feet
- medium to coarse grained sand:	10-40 feet
- dark red-brown coarse silt:	40-50 feet
- dark red shale (Brunswick Formation):	below 50 feet

Field investigations by Dan Raviv Associates included the installation of four monitoring wells (20-50 feet deep) and one well point (10 feet deep). The monitoring wells included two background locations, one near the ash pile, and one near the oil storage tanks the northeast portion of the site. Groundwater samples were analyzed for volatile organics, petroleum hydrocarbons, and PCB's. The monitoring well near the above-ground tank (downgradient location) was also analyzed for priority pollutants. Depth to groundwater is 3-4 feet and the direction of flow is toward the east.

Sampling data indicate that groundwater beneath the site is contaminated with volatile organics, petroleum hydrocarbons, and PCB's at concentrations significantly above background. The monitoring well near the ash pile showed low level contamination with benzene (28 ppb), napthalene (14 ppb), and di-n-butylphthalate (28 ppb). Groundwater in the northeast portion of the site near the oil storage tanks was found to be contaminated with PCB's (53 ppb), petroleum hydrocarbons (2,000 ppm), toluene (150 ppb), chlorobenzene (67 ppb), ethylbenzene (1,060 ppb), dichlorobenzenes (76 ppb), and various non-priority pollutant organics including cyclohexane (60 ppb), cycloheptane (100 ppb), isopropylbenzene (90 ppb), n-propylbenzene (150 ppb), ethyl toluene isomers (550 ppb), trimethylbenzene isomers (1400 ppb), and xylene isomers (2000 ppb).

A soil and groundwater study was also completed by Louis Berger Associates in 1986 in order to characterize contamination in the proposed NJ Turnpike right-of-way adjacent to the eastern site boundary. Two additional monitoring wells were installed in this area and the results showed contamination with volatile organics (up to 98 ppb), polynuclear aromatic hydrocarbons (34 ppb), phenol (877 ppb), and 2,4-dimethylphenol (860 ppb).

NJDEP water supply overlay and water allocation maps show no major public supply wells within a 3 mile radius of the site. Groundwater in the area is not used for drinking, however there are a number of industrial supply wells on the order of 200-700 feet deep which draw from the Brunswick Formation. Downward migration of contaminants at the BBD site could have an adverse impact on water quality of the Brunswick Formation.

SURFACE WATER ROUTE

The nearest downslope surface water is the Passaic River about 2000 feet to

the east, which empties into the Newark Bay roughly one mile south of the site. Storm sewers at the site reportedly lead to Harrison's Creek and the Passaic River. A NJDEP inspection in 1982 reported wastewater flowing into a storm sewer as a result of equipment malfunctions at the facility. Sample of the wastewater discharge to the storm sewer showed contamination with benzene, toluene, xylene, ethylbenzene, methylene chloride, and 1,1,1-trichloroethane. The Passaic River is used for industrial purposes and occasional recreational boating.

AIR ROUTE

There are no records of air sampling conducted at the site. The facility had 12 air pollution control permits during its operation (plant ID #05103) that included drum cleaning units, paint spray booths and ovens, drum incinerator, baghouses, and a deisel fuel and gasoline tank.

During 1978 the facility was cited for opacity violations which resulted from drums not being emptied properly prior to incineration. Hydrogen sulfide type odors and other strong odors were noted by Louis Berger Associates during work along the eastern portion of the site, and by road workers during construction along Route 1 and 9. The potential for air contamination exists due to the documented volatile organic contamination at the site, however there are other sources of air pollution in the area from adjacent highways and the Newark Airport located about three miles to the south.

SOIL

Field work completed by Dan Raviv Associates included soil samples from 19 soil borings (up to 15 feet deep) and five well borings (up to 42 feet deep). A total of 71 soil samples were analyzed at depths ranging from 0-22 feet for a variety of parameters including total petroleum hydrocarbons, volatile organics, PCB's, and priority pollutant scan. One sample was analyzed for dioxin. The highest levels of soil contamination detected at the site are listed as follows:

total priority volatile organics -	22,553 ppb
total non-priority volatile organics -	66,035 ppb
total petroleum hydrocarbons -	173,000 ppm
PCB's	320 ppm
arsenic	390 ppm
cadmium	1300 ppm
chromium	3400 ppm
copper	15,500 ppm
lead	8,400 ppm
mercury	13.0 ppm
zinc	5040 ppm

Petroleum hydrocarbon concentrations above 100 ppm were detected throughout the site at depths up to ten feet. Volatile organic and PCB contamination was detected in the oil storage tanks area, drum storage area, and ash pile area. The highest metal contamination was found near the ash pile and drum storage areas in the rear of the property.

DIRECT CONTACT

No reported incidents of direct contact were noted in Department files. The potential for direct contact is low since the facility is inactive and surrounded by a fence. The nearest residential area is about 1/2 mile to

to the west. There is a potential for exposure by highway construction workers next to the site and the few security and maintenance staff at the facility. Past BBD employees may have been exposed to hazardous materials due to sloppy housekeeping and waste handling practices and contamination which has been documented throughout the site.

FIRE AND EXPLOSION

NJDEP Enforcement files contain two reports of fires at the site, however these did not directly involve hazardous substances or wastes present at the facility. A brush fire in 1985 encompassed the portion of the site containing the automobile tire pile, but did not spread to the rows of drums in the rear of the property. A smaller brush fire also occurred at the site in 1986. Most of the drums stacked in the rear of the property (30,000 estimated) are reported to be empty, however there may be volatile or flammable residues present in some of the drums. EPA inspectors noted 100-150 drums containing ash residues and aqueous materials in a building near the incinerator area during a recent inspection and sampling episode. Samples collected from an ash pile inside the building and an aqueous drum sample showed volatile organic contamination, representing a potential fire or explosion hazard.

ADDITIONAL CONSIDERATIONS

The potential for damage to flora and fauna is low due to the urban location of the site and apparent lack of plant and animal life. Potential migration of contaminants from the site via surface runoff and storm sewers could have an adverse impact on Passaic River biota. The potential for damage to offsite property exists through migration of contaminants in groundwater and surface runoff. Contamination was found in the proposed N.J. Turnpike right-of-way adjacent to the eastern site boundary.

EPA RCRA ENFORCEMENT INSPECTION

A RCRA sampling inspection was conducted at Bayonne Barrel and Drum on June 2, 1988 by EPA Region II personnel. The facility was found to be in violation of RCRA and TSCA violations based upon sampling results and a visual inspection of the site. Analytical data showed that several waste ash piles present at the site are considered a hazardous waste due to levels of cadmium above RCRA criteria limits for EP Toxicity. The ash pile in the rear of the property showed PCB contamination of 115 ppm and 293 ppm for arochlor 1248 and 1252, respectively. Approximately 100-150 drums were observed in the drum and ash storage room which were not labeled as a hazardous waste and apparently stored for greater than 90 days.

ENFORCEMENT ACTIONS

An EPA Consent Agreement and Order issued in 1984 cited Bayonne Barrel and Drum Co. for operation of a hazardous waste facility and storage of hazardous wastes without a hazardous waste permit. The order required the facility to implement a soil sampling program and to remove hazardous waste piles present at the site, liquid and sludge from the oil storage tanks, and areas of contaminated soil identified on the property. The facility was also required to submit a closure plan. A soil and groundwater characterization study was completed in 1986, however BBD has not complied with the remaining terms of the consent agreement.

The U.S. Justice Department has filed a suit against the company and its president, Frank Langella, for various violations of RCRA and failure to comply with the terms of the EPA consent agreement. The case is currently

in litigation. An attorney for the U.S. Justice Department has indicated that the facility may be sold to a third party which may be willing to conduct the cleanup, in which case the site would be subject to ECRA regulations. As previously mentioned, BBD filed for bankruptcy in 1982 and has reportedly defaulted on a back loan, thus the bank (First National State Bank) could foreclose and take title to the property but has apparently not done so because they would be considered a responsible party under CERCLA as owner of the site. Both the EPA and U.S. Justice Department have expressed interest in having the NJDEP involved in reviewing any sampling/cleanup plans which may be developed for the site following litigation.

RECOMMENDATIONS

No additional sampling is recommended at this time by the Bureau of Planning and Assessment since adequate data is available which documents the presence of soil and groundwater contamination at the site. A summary of sampling data is attached. At this time the case should be transferred to the Responsible Party Cleanup Element Bureau of Case Management - State Program for overall case management responsibilities. Any future site investigation/remediation efforts should be consistent with ECRA requirements since there is a strong possibility that the facility may be sold following the bankruptcy litigation, thereby necessitating case transfer to the Industrial Site Evaluation Element.

Submitted by:

Edward Gaven

Edward Gaven, HSMS III
NJDEP Bureau of Planning and Assessment
December 2, 1988

SUMMARY OF SAMPLING DATA

I. EPA RCRA INSPECTION AND SAMPLING EPISODE REPORT

Sampling Date:	May 16, 1984
Sampled By:	EPA Surveillance and Monitoring Branch
Samples:	soil - 3 waste (aqueous) - 3 waste (ash/sludge) - 3
Laboratory:	EPA Region II Laboratory, Edison, N.J.
Parameters:	Soil and ash samples were analyzed for volatile and non-volatile organics, metals, PCB's, and EP Toxicity. Aqueous samples were analyzed for volatile and non-volatile organics, and RCRA characteristics (ignitability, corrosivity).
Sample Description:	Soil samples included one each from the area around the underground settling tank, the subsurface tank near the incinerator, and the oil/water separator trench. Ash samples were collected from the ash sludge pile in the rear of the property. Aqueous samples were collected from the underground settling tank, the subsurface tank near the incinerator, and the oil/water separator trench.
Results:	Contaminants detected in soil samples included the following substances along with highest concentrations shown in parenthesis: cadmium (59 ppm), chromium (1,200 ppm), copper (1,100 ppm), mercury (27 ppm), lead (4,500 ppm), arochlor 1248 (67.2 ppm), and arochlor 1254 (117.5 ppm). Total volatile organic and base neutral organic concentrations were on the order of 4.1 ppm and 1,950 ppm, respectively. Ash samples showed contamination with cadmium (160 ppm), chromium (3,300 ppm), copper (3,300 ppm), and mercury (21 ppm), while total volatile organic and base neutral organic concentrations were on the order of 400 ppm and 2,000 ppm, respectively. The ash pile in the rear of the property was determined to be EP toxic for cadmium and lead. Contaminants detected in the aqueous waste samples included toluene (4.9 ppm), bis (2-ethylhexyl) phthallate (13 ppm), butyl benzl phthallate (1.1 ppm), and di-n-butyl phthallate (1.8 ppm).
QA/QC Information:	The sampling report contained no information regarding any blank or duplicate samples, or whether the data were subject to a QA/QC review. Sampling was conducted in accord with EPA standard procedures.

File Location:	NJDEP/DHWM Metro Field Office, West Orange, N.J.

II. LOUIS BERGER ASSOCIATES REPORT - SAMPLING IN PROPOSED NJ TURNPIKE RIGHT OF WAY.

Sampling Dates:	April 25, 26, 28, 1988 and May 5, 6, 27, 1988
Sampled By:	Louis Berger Associates, East Orange, N.J.
Samples:	soil - 21 groundwater - 2
Laboratory:	ETC Laboratory, Edison, N.J.
Parameters:	Priority pollutants plus forty
Sample Description:	Soil samples included fourteen discrete samples and seven composite samples at depths up to three feet. Groundwater samples were collected from two monitoring wells (15 feet deep) installed along the eastern site boundary.
Results:	Soil contaminants included arsenic (73 ppm), cadmium (71 ppm), chromium (590 ppm), copper (870 ppm), lead (8,520 ppm), benzene (31 ppm), ethylbenzene (408 ppm), toluene (321 ppm), 2,4-dimethylphenol (188 ppm), phenol (58.9 ppm), and PAH compounds (up to 861 ppm). Groundwater samples showed contamination with toluene (76.6 ppb), ethylbenzene (15.9 ppb), benzene (5.6 ppb), 2,4-dimethylphenol (860 ppb), phenol (877 ppb), acenaphthene (9.2 ppb), fluorene (3.15 ppb), naphthalene (16.3 ppb), and phenanthrene (4.9 ppb).
QA/QC Information:	The sampling report indicated that chain of custody procedures were carried out in accord with EPA and NJDEP procedures. The analytical data were not subject to a QA/QC review by NJDEP, however the lab reports (NJDEP Tier II format) were reviewed by a QA Coordinator from the consulting firm, Louis Berger Associates.
File Location:	EPA Surveillance and Monitoring Branch Edison, N.J.

III. DAN RAVIV ASSOCIATES REPORT - SOIL AND GROUNDWATER CHARACTERIZATION

Sampling Dates:	January 18, 1985; October 25-31, 1985; November 27 to December 17, 1985; January 7, 1986.
Sampled By:	Dan Raviv Associates, West Orange, N.J.
Samples:	soil - 75 (approx.) sediment - 4 surface water - 1 groundwater - 5
Laboratory:	Gollob Analytical Laboratory, Berkeley Heights, N.J.

Parameters: Sample parameters included priority pollutants plus forty, volatile organics plus fifteen, PCB's, metals, petroleum hydrocarbons, and dioxin.

Sample Description: Soil samples were collected from nineteen soil borings (up to 15 feet deep) and five well borings (up to 42 feet deep). Approximately 75 soil samples were analyzed at depths up to 22 feet. Sediment samples were collected from the oil separator trench and from drainage canals and floor pits inside three of the buildings surrounding the incinerator area. The surface water sample was collected from the oil separator trench.

Results: The highest levels of contamination are listed as follows:

soil:	total priority volatile organics	22.5 ppm
	total non-priority volatile organics	66.0 ppm
	total petroleum hydrocarbons	173,000 ppm
	PCB's	320 ppm
	arsenic	390 ppm
	cadmium	1,300 ppm
	chromium	3,400 ppm
	copper	15,500 ppm
	lead	8,400 ppm
	mercury	13 ppm
	zinc	5,040 ppm
sediment:	petroleum hydrocarbons	39,400 ppm
	toluene	39 ppb
	PCB's	130 ppm
surface water:	petroleum hydrocarbons	670 ppm
groundwater:	petroleum hydrocarbons	2,000 ppm
	PCB's	53 ppb
	chlorobenzene	67 ppb
	ethylbenzene	1,060 ppb
	toluene	150 ppb
	dichlorobenzene(s)	76 ppb

QA/QC Information: Analytical data included four field blanks, two lab duplicates, and chain of custody records. The data were not subject to a formal QA/QC review by NJDEP.

File Location: EPA Surveillance and Monitoring Branch Edison, N.J.

IV. EPA RCRA INSPECTION AND SAMPLING REPORT

Sampling Date: June 2, 1988

Sampled By: EPA Surveillance and Monitoring Branch, Edison, N.J.

Samples: waste (ash piles) - 5
waste (aqueous samples) - 5

Laboratory: EPA Region II Laboratory, Edison, N.J.

Parameters: Volatile organics, non-volatile organics, PCB's, EP Toxicity metals.

Description: Samples were collected from waste ash piles in the furnace room building, the drum and ash storage room, the courtyard area near the incinerator, and from the large ash pile in the rear of the property. Aqueous samples were collected from the oil separator trench, the pump house, the underground holding/settling tank, a drum inside the drum and ash storage room, and from ponded water in the courtyard area.

Results: The highest levels of contamination are listed as follows:

Ash samples:

furnace room ash pile - low levels of volatile organic and PAH compounds.
courtyard ash pile - ethylbenzene (570 ppb), toluene (1,300 ppb), xylene (1,200 ppm), PAH compounds.
drum and ash storage room ash pile - ethylbenzene (1,500 ppb), tetrachloroethylene (1,200 ppb), toluene (2,700 ppb), trichloroethylene (550 ppb), xylene (3,200 ppb), PAH compounds.
ash pile in rear of property - ethylbenzene (5,200 ppb), tetrachloroethylene (1,300 ppb), toluene (12,000 ppb), trichloroethylene (490 ppb), xylene (4,600 ppb), styrene (2,500 ppb), arochlor 1248 (293 ppm), arochlor 1254 (115 ppm), EP Tox cadmium (2.84 ppm), PAH compounds.

Aqueous samples:

oil separator trench - low level volatile organics and PAH compounds.
pump house - ethylbenzene (130 ppb), toluene (660 ppb), vinyl chloride (18 ppb), PAH compounds.
underground tank - low level volatile organics and PAH compounds.
courtyard area - low level volatile organics and PAH compounds.
drum sample - benzene (92 ppm), chlorobenzene (78 ppm), ethylbenzene (1,200 ppm), tetrachloroethylene (62 ppm), toluene (2,400 ppm), xylene (10,000 ppm), dichlorobenzene(s) (200 ppm), dibenzofuran (567 ppb), 2,4-dinitrotoluene (597 ppb).

QA/QC Information: Samples were collected in accord with EPA standard sampling protocol and chain of custody procedures. Analytical data were subject to a QA review by EPA Region II personnel. Samples were split with Interwaste Services Company (ISCO), which was contracted by BBD to collect split samples and observe EPA sampling procedures.

File Location: EPA Surveillance and Monitoring Branch Edison, N.J.

Site Inspection Report

BAYONNE BARREL AND DRUM COMPANY
154 RAYMOND BLVD.
NEWARK, ESSEX COUNTY, N.J.

EPA ID# NJD 009871401

Hours: 25

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER				
Bayonne Barrel and Drum Co.	154 Raymond Blvd				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CITY CODE**
Newark	NJ	07105	Essex		

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
40° 43' 56"	74° 07' 30"	☐ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION (MONTH DAY YEAR)	02 SITE STATUS	03 YEARS OF OPERATION
6-2-88	☐ ACTIVE ☒ INACTIVE	1945 (BEGINNING YEAR) 1982 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☒ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)

☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☐ G. OTHER Dan Raviv Associates (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Site Inspection Review			( )
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
			( )
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Frank Langella	President-BBD	154 Raymond Blvd. Newark, NJ	( )
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Mike Ferriola	EPA Surveillence and Monitoring Branch	( ) 201 321-6774

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE (MONTH DAY YEAR)
Ed Gaven	NJDEP	DHWM/BPA	609/292-4320	12-07-88

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [X] C. SLUDGE
- [ ] D. OTHER _____ (Specify)
- [ ] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS 1500
NO. OF DRUMS 100 - 150

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [X] E. SOLUBLE
- [ ] F. INFECTIOUS
- [X] G. FLAMMABLE
- [X] H. IGNITABLE
- [X] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
(SLU)	SLUDGE	1,500	cubic yards	ash/sludge pile
(OLW)	OILY WASTE	70,000	gallons	oil and sludge storage tanks
(SOL)	SOLVENTS	unknown		
PSD	PESTICIDES			
(OCC)	OTHER ORGANIC CHEMICALS	unknown		
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
(MES)	HEAVY METALS	unknown		

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	benzene	71-43-2	Groundwater Samples	28	ppb
SOL	chlorobenzene	108-90-7	* Concentration	67	ppb
SOL	ethybenzene	100-41-4	shown are the	1,060	ppb
SOL	toluene	108-88-3	highest levels	150	ppb
SOL	xylene	1330-20-7	detected in	2,000	ppb
SOL	diethyl ether		groundwater	30	ppb
SOL	isoprophyl benzene		samples.	90	ppb
OCC	n-propylbenzene			150	ppb
OCC	di-n-butylphthallate	84-74-2		28	ppb
OCC	napthalene	91-20-3		14	ppb
OCC	cyclohexane	110-82-7		60	ppb
OCC	cycloheptane			100	ppb
OCC	2,4-dimethylphenol	105-67-9		860	ppb
OCC	phenol	108-95-2		877	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Soil and Groundwater charaterization Report- Dan Raviv Associates (Ref. B)

Sampling in Proposed NJ Turnpike Right-of-Way- Louis Berger Associates (Ref. C)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS
CUBIC YARDS
NO. OF DRUMS

03 WASTE CHARACTERISTICS (Check all that apply)

- [ ] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	benzene	71-43-2		265	ppb
SOL	chlorobenzene	108-90-7	Soil Samples	650	ppb
SOL	ethylbenzene	100-41-4		8,000	ppb
SOL	1,1-dichloroethane	75-34-3		1,000	ppb
SOL	1,2-dichloroethylene	25323-30-2	* Concentrations	1,100	ppb
SOL	methylene chloride	75-09-2	shown are the	740	ppb
SOL	1,1,1-trichloroethane	71-55-06	highest levels	850	ppb
SOL	trichloroethylene	79-01-6	detected in soil	830	ppb
SOL	toluene	108-88-3	samples.	14,000	ppb
SOL	xylene	1330-20-7		9,600	ppb
SOL	methyl ethyl ketone	78-93-3		170	ppb
SOL	methyl isobutyl ketone	105-44-2		730	ppb
SOL	styrene	100-42-5		450	ppb
OCC	acenaphthene	83-32-9		19,600	ppb
OCC	anthracene	120-12-7		15,300	ppb
OCC	benzo (a) anthracene	56-55-3		22,000	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Soil and Groundwater Charaterization Report-Dan Raviv Associates (Ref. B)
Sampling in Proposed N.J. Turnpike Right-of-Way---Louis Berger Associates (Ref. C)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)
- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)
- TONS
- CUBIC YARDS
- NO. OF DRUMS

03 WASTE CHARACTERISTICS (Check all that apply)
- [ ] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	benzo(a) pyrene	50-32-8		18,000	ppb
OCC	benzo (b) fluoranthene	207-08-9	Soil Samples	23,000	ppb
OCC	benzo (g,h,i) perylene	191-24-2		4,000	ppb
OCC	bis(2-ethylhexyl)phthallate	117-81-7	* Concentrations	290,000	ppb
OCC	butyl benzyl phthallate	85-68-7	shown are the	30,100	ppb
OCC	chrysene	218-01-9	highest levels	24,400	ppb
OCC	1,4-dichlorobenzene	25321-22-6	detected in soil	11,800	ppb
OCC	diethyl phthallate	84-66-2	samples	11,500	ppb
OCC	dimethyl phthallate	131-11-3		22,000	ppb
OCC	di-n-butyl phthallate	84-74-2		87,900	ppb
OCC	fluoranthene	206-44-0		35,900	ppb
OCC	fluorene	86-73-7		29,300	ppb
OCC	napthalene	91-20-3		191,000	ppb
OCC	phenanthrene	85-01-8		80,800	ppb
OCC	pyrene	129-00-0		56,200	ppb
OCC	1,2,4-trichlorobenzene	120-82-1		24,700	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Soil and Groundwater Charaterization Report- Dan Raviv Associates . (Ref. B)
Sampling in Proposed N.J. Turnpike Right-of-Way - Louis Berger Associates (Ref. C)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [XX] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS _____
CUBIC YARDS _____
NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [ ] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
MES	arsenic	7440-38-2		390	ppm
MES	cadmium	7440-43-9	Soil Samples	1,300	ppm
MES	chromium	7440-47-3		3,400	ppm
MES	copper	7440-50-8	* Concentrations	15,000	ppm
MES	lead	7439-92-1	shown are the highest	8,400	ppm
MES	mercury	7439-97-6	levels detected in	13.6	ppm
MES	zinc	7440-66-6	soil samples.	5,040	ppm
SOL	ethylbenzene	100-41-4	waste ash pile	5,200	ppb
SOL	trichloroethylene	79-01-6	samples	490	ppb
SOL	tetrachloroethylene	127-18-4		1,300	ppb
SOL	toluene	108-88-3		12,000	ppb
SOL	xylene	1330-20-7		4,600	ppb
SOL	styrene	100-42-5		2,500	ppb
OCC	arochlor 1248	12672-29-6		293,970	ppb
OCC	arochlor 1254	11097-69-1		115,400	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Investigation and Sampling Episode (Ref. A)
Soil and Groundwater Charaterization Report-Dan Raviv Associates (Ref. B)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- [ ] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	benzene	71-43-2	aqueous drum sample	92,000	ppb
SOL	chlorobenzene	108-90-7		78,000	ppb
SOL	ethylbenzene	100-41-4		1,200,000	ppb
SOL	tetrachloroethylene	127-18-4		62,000	ppb
SOL	xylene	108-88-3		10,000,000	ppb
SOL	toluene	1330-20-7		2,400,000	ppb
SOL					
OCC	1,3-dichlorobenzene	25321-22-6		2,610	ppb
OCC	1,4-dichlorobenzene	25321-22-6		34,200	ppb
OCC	1,2-dichlorobenzene	25321-22-6		167,140	ppb
OCC	napthalene	91-20-3		28,380	ppb
OCC	dibenzofuran	132-64-9		567	ppb
OCC	2,4-dinitrotoluene	121-14-2		597	ppb

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Investigation and Sampling Episode (Ref. A)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: NJ	02 SITE NUMBER: D009871401

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [X] OBSERVED (DATE: July 1986) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Groundwater beneath the site is contaminated with volatile organics, petroleum hydrocarbons and PCB's.

Ref. B

01 [X] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

There is a potential for migration of surface run-off from site into the Passaic River via storm sewers. Samples of a wastewater discharge into a storm sewer at the facility in 1982 showed contamination with violatile organic compounds. Ref. E,S

01 [X] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Potential exists due to documented volatile organic contamination throughout the site. Strong odors have been noted by highway construction workers adjacent to the site. Ref. B,L

01 [X] D. FIRE, EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

An EPA site inspection/sampling episode in 1988 reported 100-150 drums stored in a building near the incinerator. Drum and ash samples showed volatile organic contamination, representing a potential fire or explosive hazard. Brush fires were reported at the site in 1985 and 1986. Ref. A,N,M

01 [X] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

The potential for direct contact is low since the facility is inactive and surrounded by a fence. The nearest residential area is about ½ mile away, however there is a potential for exposure of highway construction workers along Route 1 and 9 and the N.J. Turnpike. Ref. A,L

01 [X] F. CONTAMINATION OF SOIL — 02 [X] OBSERVED (DATE: July 1986) — [ ] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

Soil samples show high levels of contamination with volatile organics, petroleum hydrocarbons, PCB's and metals.

Ref. B

01 [ ] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

no potential exists since groundwater in the area is not used for drinking. Downward migration of contaminants could affect the Brunswick formation, which is used for industrial purposes in the Newark area. Ref. B Maps 5 & 7

01 [X] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Past employees may have been exposed to hazardous substances due to sloppy housekeeping and waste handling practices and documented contamination on-site. Currently, there are a few security and maintenance personnel present at the facility. Ref. A,B

01 [X] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Potential for population exposure is low since the nearest residential area is about ½ mile away. The facility is fenced in, however there is a potential for off-site contamination and population exposure due to urban location.

Ref.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: NJ | 02 SITE NUMBER: D009871401

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 [X] J. DAMAGE TO FLORA — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential migration of contaminants via surface run-off and storm sewers may have adverse impact on Passaic River biota.

Ref. S

01 [X] K. DAMAGE TO FAUNA — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION (Include names(s) of species)

Potential migration of contaminants via surface run-off and storm sewers may have adverse impact in Passaic River Biota.

Ref. S

01 [X] L. CONTAMINATION OF FOOD CHAIN — 02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Potential exists due to documented PCB and metal contamination at site.

Ref. B

01 [X] M. UNSTABLE CONTAINMENT OF WASTES (Spills Runoff Standing liquids Leaking drums) — 02 [ ] OBSERVED (DATE: June 1988) [ ] POTENTIAL [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Ash piles in the rear of the property do not have adequate containment or runoff control.

Ref. A

01 [X] N. DAMAGE TO OFFSITE PROPERTY — 02 [X] OBSERVED (DATE: July 1986) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Contamination related to past operations at the facility has been detected in the proposed N.J. Turnpike Right-of-Way adjacent to the eastern site boundry.

Ref. C

01 [X] O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 [X] OBSERVED (DATE 2-22-82) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Samples of a wastewater discharge into a storm sewer at the facility in 1982 showed volatile organic contamination. The storm sewer reportedly leads to the Passaic River.

Ref. E, S

01 [X] P. ILLEGAL/UNAUTHORIZED DUMPING — 02 [ ] OBSERVED (DATE June 1988) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Ash piles are stored on open ground in the rear of the property. Sampling data indicate that the material is EP toxic for cadmium in violation of RCRA regulations.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

An estimated 30,000 drums are stacked in rows in the rear of the property. The drums are reported to be empty, however some may contain waste residues.

Ref. A,R

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

EPA Inspection and Sampling Episode (Ref.A)
Soil and Groundwater Characterization Report-Dan Raviv Associates (Ref. B)
Sampling in Proposed N.J. Turnpike Right-of-Way -Louis Berger Associates (Ref.C)

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Sludge and Liquid Sampling Results-1982 (Ref. E)
NJDEP Incident NOtification Reports (Ref.L,M)
EPA Pollution Report on Fire Incident (Ref. N)
~~NJDEP Site Inspection Memo (Ref. R)~~
NJDEP Hazardous Waste INvestigation Reports (Ref. S)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
X A. NPDES	NJ0064068	2-15-88	2-28-90	inactive 15E sanitary land fill
☐ B. UIC				
X C. AIR	plant ID#05103		expired	
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
X B. PILES	1,500	cubic yards
X C. DRUMS, ABOVE GROUND	100-150	drums
X D. TANK, ABOVE GROUND	65,000	gallons
X E. TANK, BELOW GROUND	5,000	gallons
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- X A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL PHYSICAL
- ☐ D. BIOLOGICAL
- X E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

- X A. BUILDINGS ON SITE

06 AREA OF SITE

15 (Acres)

07 COMMENTS

01B- Ash pile in rear of property is approximately 225' x 50' x 4'.
01C- Drums located inside building near incinerator area;an estimated 30,00 drums are stacked in rear of property, reportedly empty.
01D- Oil and sludge storage tank.
01E- Wastewater holding/settling tank.
04A and E: Incinerator and oil separator trench no longer active.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE X C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Ash piles are stored in rear of property on open ground without proper containment or runoff control. Documented soil and groundwater contamination indicates inadequate containment of wastes.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: X YES ☐ NO

02 COMMENTS

Facility is surrounded by a fence to prevent access and is also inactive.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

EPA Inspection and Sampling Episode (Ref. A)
Soil and Groundwater Characterization-Dan Raviv Associates (Ref. B)
NJPDES Permit and Fact Sheet (Ref. J)
NJDEP/BAPC Stack Log Listing (Ref. V)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)			02 STATUS			03 DISTANCE TO SITE
	SURFACE	WELL	ENDANGERED	AFFECTED	MONITORED	
COMMUNITY	A ☒	B ☐	A ☐	B ☐	C ☒	A 20-25 (mi)
NON-COMMUNITY	C ☐	D ☐	D ☐	E ☐	F ☐	B _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL INDUSTRIAL IRRIGATION (No other water sources available) ☒ C. COMMERCIAL INDUSTRIAL IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER	03 DISTANCE TO NEAREST DRINKING WATER WELL
N/A	> 4.0 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
3-4 (ft)	east	50 (ft)	500gpm (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

Industrial supply wells within 1-2 miles of the site are on the order of 200-700 feet deep and draw from the Brunswick formation

10 RECHARGE AREA		11 DISCHARGE AREA	
☐ YES ☐ NO	COMMENTS	☐ YES ☐ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION, DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☒ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Passaic River	☐	2000 feet (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN			02 DISTANCE TO NEAREST POPULATION
ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE	
A. 32,000 NO. OF PERSONS	B. 100,000 NO. OF PERSONS	C. 225,000 NO. OF PERSONS	0.25 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
numerous	0.10 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Site is in an urban industrial area bordered by the NJ Turnpike and Route 1 and 9. The nearest residential area is located about ½ mile to the west. Population within 3 miles of the site includes roughly half of Newark and Jersey City, and most of Harrison.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one) fill material and sand

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec XX ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one) fractured shale and sandstone

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☒ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
50 (ft)	10 (ft)		

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
12 (in)	2.5 (in)	1-2 %	North st	0-1 %

09 FLOOD POTENTIAL: SITE IS IN N/A YEAR FLOODPLAIN

10: ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY N/A

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. N/A (mi)	B. N/A (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species): N/A (mi)

ENDANGERED SPECIES:

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. 0.10 (mi)	B. 0.50 (mi)	C. N/A (mi)	D. N.A (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The ground surface at the site is about 10 feet above MSL and slopes toward the northeast. The site is underlain by approximately 10 feet of fill material, 30-40 feet of sand and salt, and fractured shale bedrock of the Brunswick formation. Depth to groundwater is 3-4 feet and the direction of flow is toward the east.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Soil and Grounwater Characterization Report -Dan Raviv Associates (Ref.A)
USGS Quad Map- Elizabeth Quad (Map 1)
NJDEP Water Supply Overlay map (Map 5)
NJDEP Water Allocation Map (Map 7)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	5 2	Gollob Analytical, Berkeley Heights, NJ ETC Laboratory, Edison, NJ	available
SURFACE WATER			
WASTE	10	EPA Edison, Edison, NJ	available
AIR			
RUNOFF			
SPILL			
SOIL	70 18	Gollob Analytical, Berkeley Heights, NJ ETC Laboratory, Edison, NJ	available
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____
(Name of organization or individual)

03 MAPS
☐ YES
☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

EPA inspection and sampling episode (ref. A)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Bayonne Barrel & Drum Co.		154 Raymond Blvd.	3412	Newark	NJ	07105
Frank Langella		154 Raymond Blvd.		Newark	NJ	07105

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Colville Bros., Inc.						
B & F Co. Inc.						

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
Site inactive	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
Bayonne Barrel & Drum Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
154 Raymond Blvd.	3412

05 CITY	06 STATE	07 ZIP CODE
Newark	NJ	07105

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD
1945-1982	Frank Langella

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NJ	D009871401

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Bayonne Barrel & Drum, Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
154 Raymond Blvd.	3412

05 CITY	06 STATE	07 ZIP CODE
Newark	NJ	07105

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY ENFORCEMENT ACTION ☒ YES ☐ NO

02 DESCRIPTION OF FEDERAL STATE LOCAL REGULATORY/ENFORCEMENT ACTION

An EPA Consent Agreement issued in 1984 cited Bayonne Barrel and Drum Company, for operation of a hazardous waste facility and storage of hazardous wastes without a hazardous waste permit, in violation of RCRA regulation. The facility was required to conduct an investigation of contamination and submit a closure plan for the facility. The US Justice Department has filed a suit against the company and its president, Frank Langella, for RCRA violations and failure to comply with the terms of the Consent Agreement signed with EPA. The case is presently in litigation.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA Consent Order (ref. Q)

BAYONNE BARREL AND DRUM CO.
REFERENCES

MAPS

1. USGS QUAD MAP: ELIZABETH AND JERSEY CITY QUADS
2. SITE MAP: LOUIS BERGER & ASSOCIATES
3. CITY OF NEWARK TAX MAP
4. NJ ATLAS BASE MAP
5. NJDEP WATER SUPPLY OVERLAY MAP #26
6. NJDEP GEOLOGIC OVERLAY MAP AND WELL INFORMATION
7. NJDEP/DWR WATER ALLOCATION RADIUS MAP

ATTACHMENTS

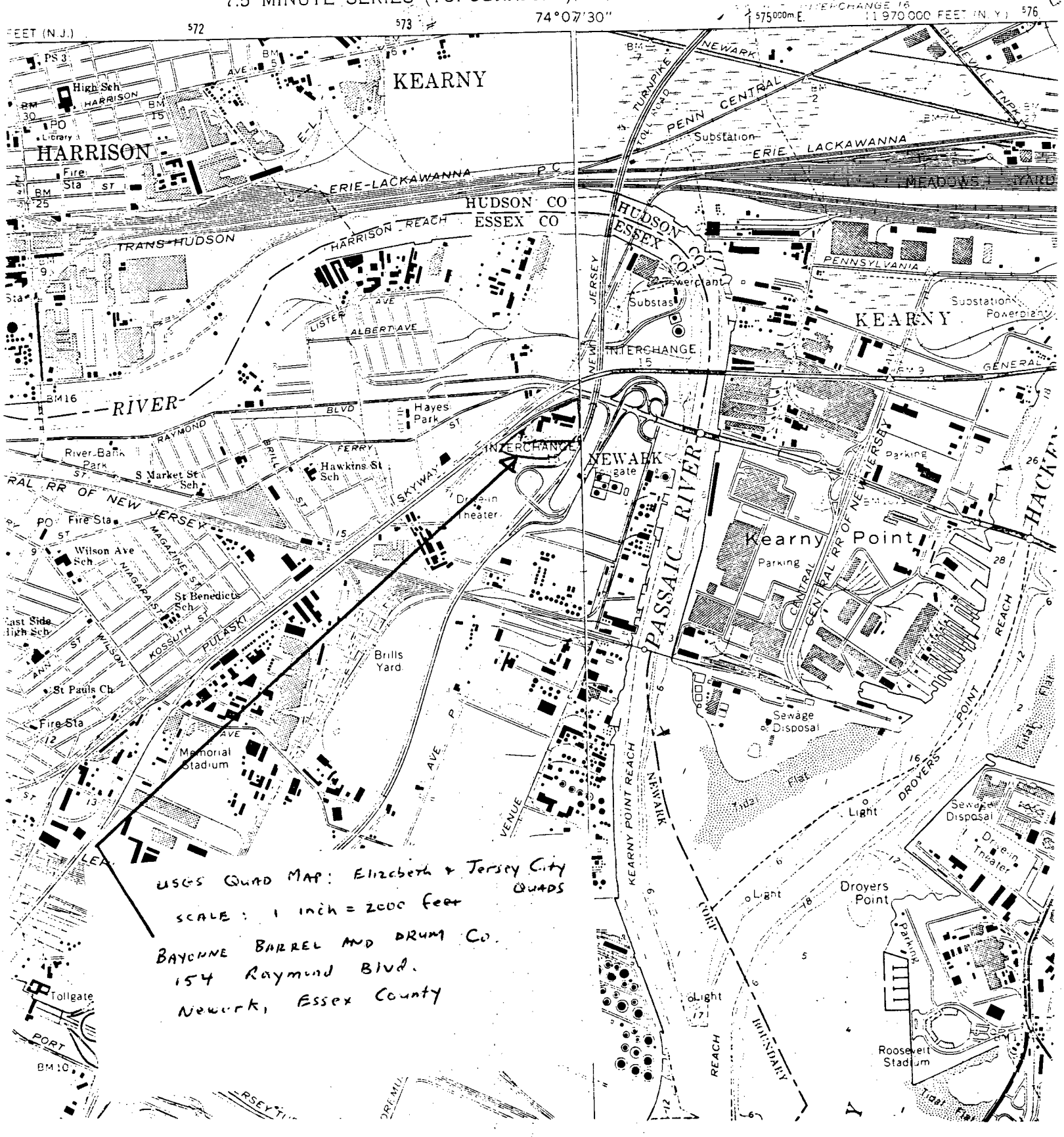
A.	EPA RCRA ENFORCEMENT INSPECTION AND SAMPLING	6/2/88
B.	SOIL AND GROUND WATER CHARACTERIZATION - DAN RAVIV	7/86
C.	PRELIMINARY INVESTIGATION AND SAMPLING IN PROPOSED N.J. TURNPIKE RIGHT-OF-WAY - LOUIS BERGER ASSOCIATES.	12/86
D.	EPA RCRA INSPECTION AND SAMPLING EPISODE	5/16/84

Note: The Preliminary Assessment Report and Documentation Package were also referenced in this report.

ELIZABETH QUADRANGLE
NEW JERSEY–NEW YORK
7.5 MINUTE SERIES (TOPOGRAPHIC)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Jersey City Quad



USGS QUAD MAP: Elizabeth & Jersey City Quads

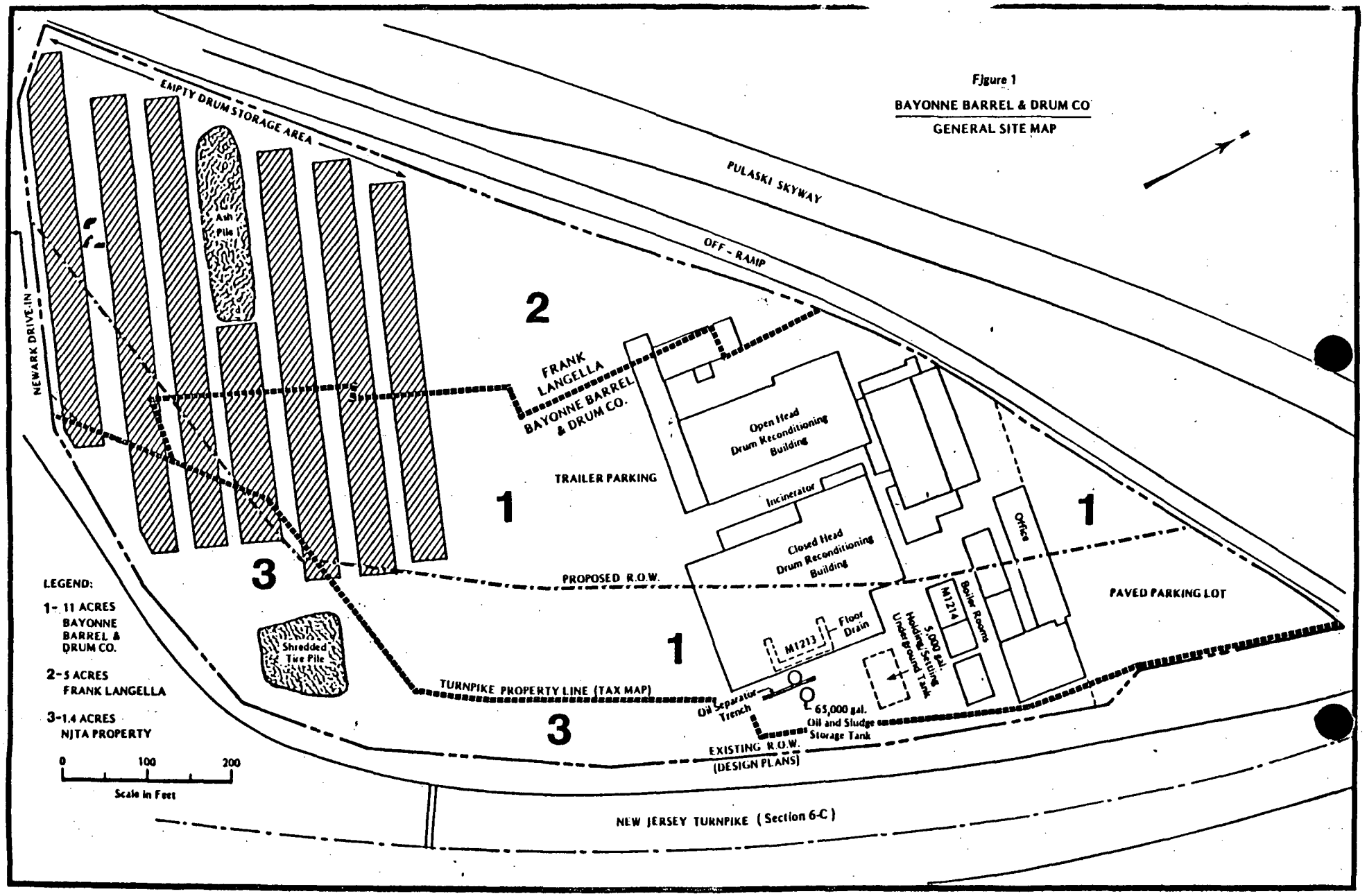
SCALE: 1 inch = 2000 feet

BAYONNE BARREL AND DRUM CO.
154 Raymond Blvd.
Newark, Essex County

Figure 1

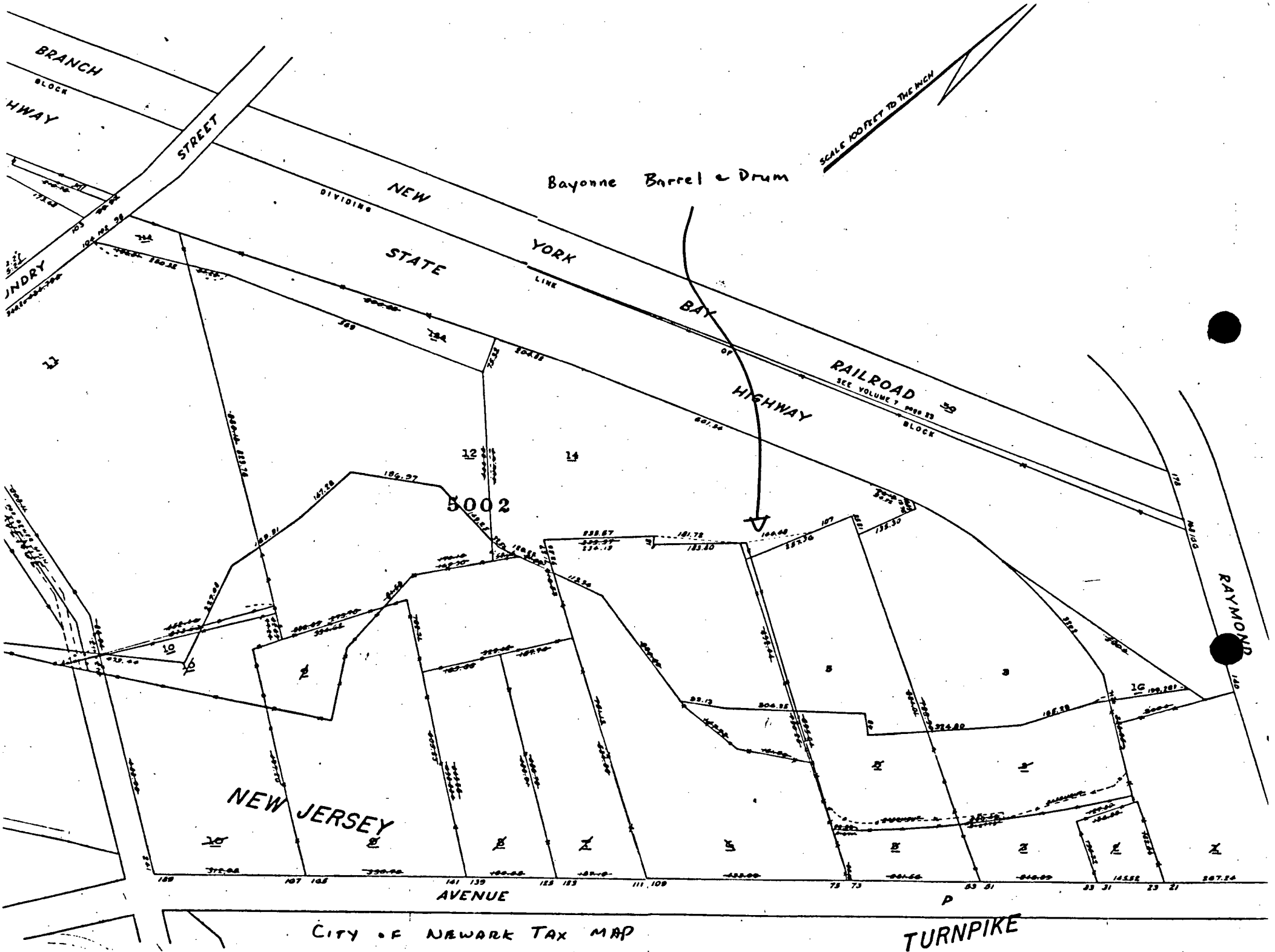
BAYONNE BARREL & DRUM CO

GENERAL SITE MAP



MAP 2

ATTACHMENT 2

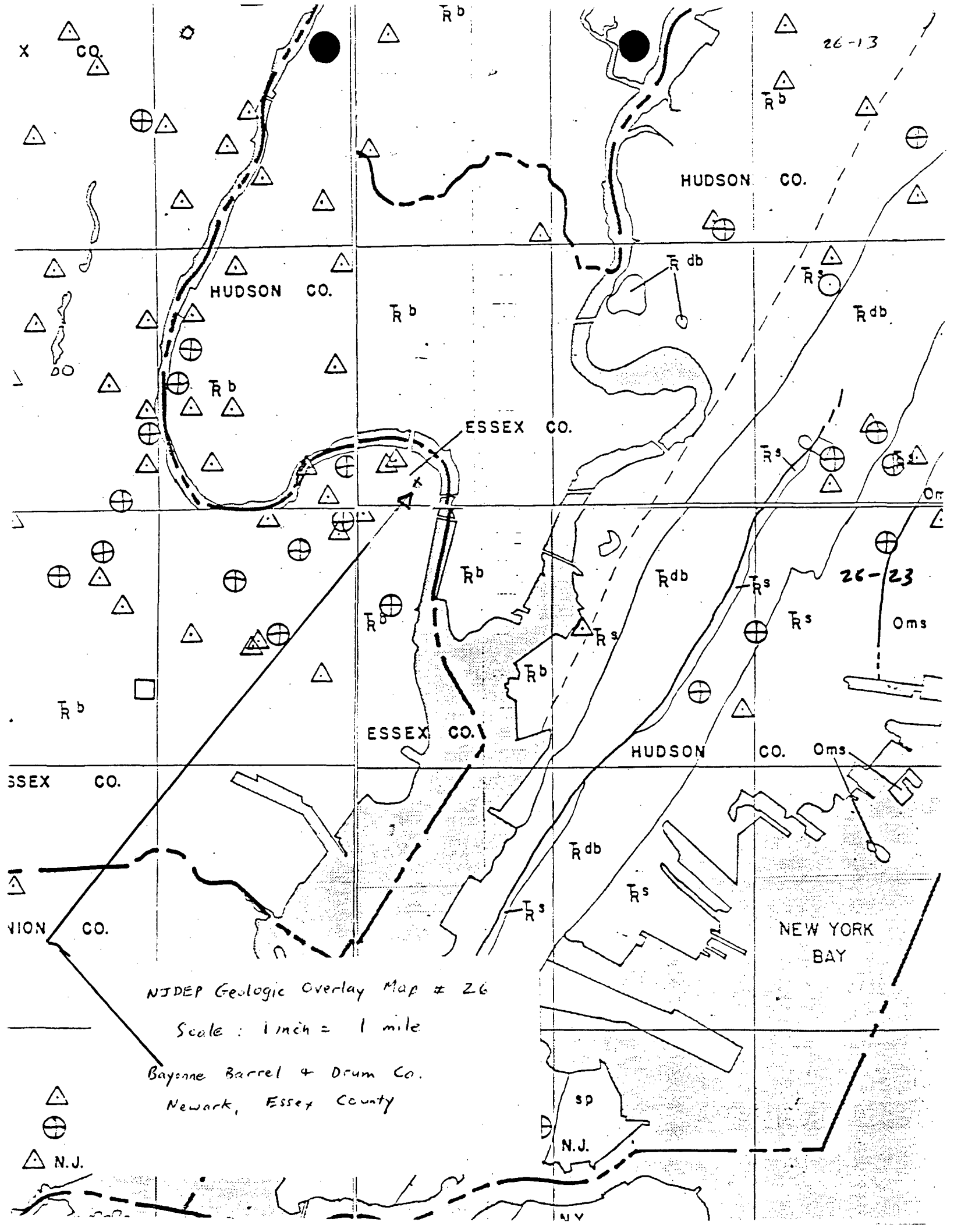


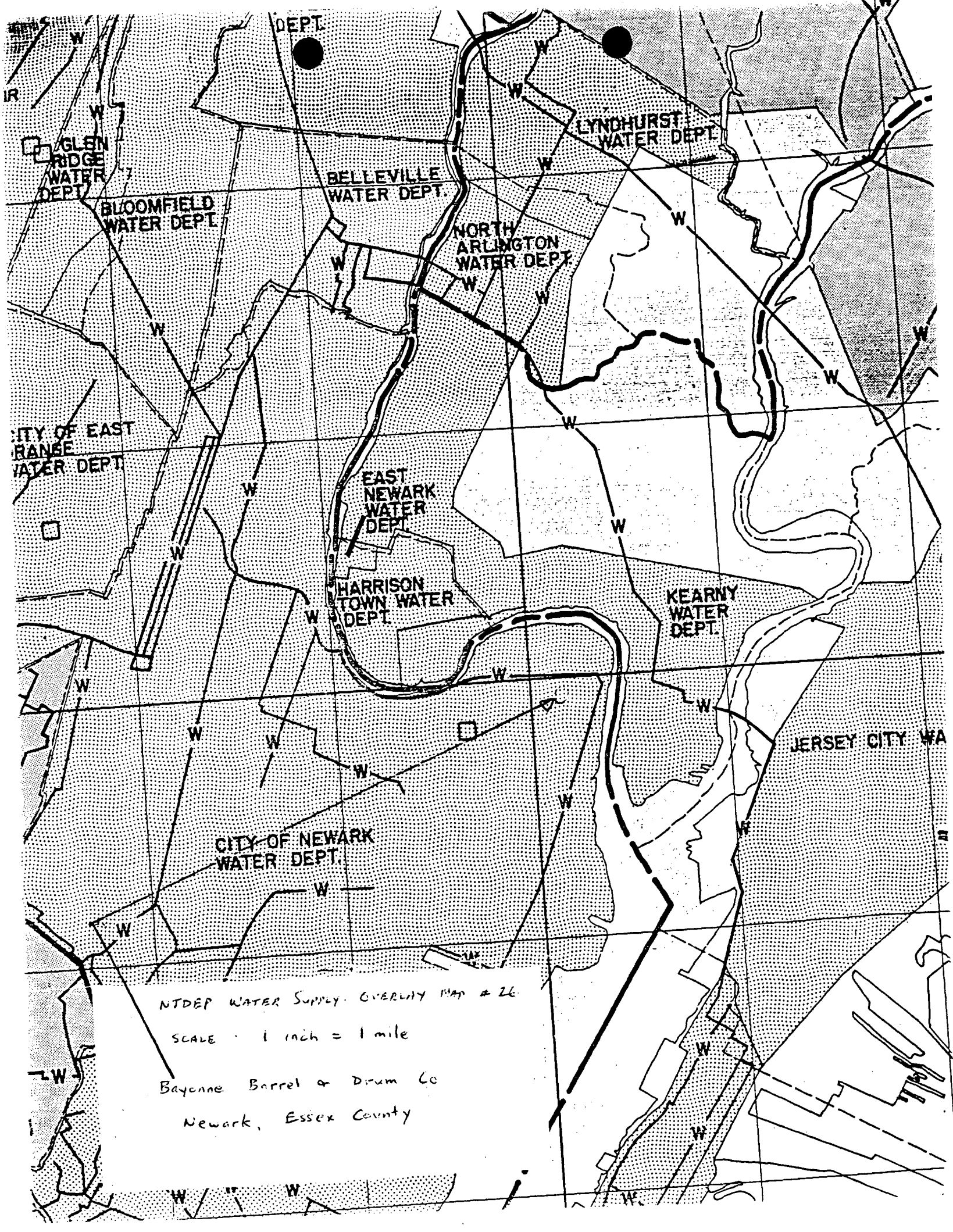
CITY OF NEWARK TAX MAP

SCALE 1 inch = 100 feet

NJ ATLAS BASE MAP # 26
SCALE : 1 inch = 1 mile

Bayonne Barrel & Drum Co.
Newark, Essex County, N.J.


26-13
HUDSON CO.
HUDSON CO.
ESSEX CO.
26-23
Oms
ESSEX CO.
HUDSON CO.
Oms
NEW YORK BAY
N.J.
N.J.
NJDEP Geologic Overlay Map # 26
Scale : 1 inch = 1 mile
Bayonne Barrel & Drum Co.
Newark, Essex County


GLEN RIDGE WATER DEPT.
BLOOMFIELD WATER DEPT.
BELLEVILLE WATER DEPT.
NORTH ARLINGTON WATER DEPT.
LYNDHURST WATER DEPT.
CITY OF EAST ORANGE WATER DEPT.
EAST NEWARK WATER DEPT.
HARRISON TOWN WATER DEPT.
KEARNY WATER DEPT.
JERSEY CITY WA
CITY OF NEWARK WATER DEPT.
NTDEP WATER SUPPLY OVERLAY MAP # 26
SCALE : 1 inch = 1 mile
Bayonne Barrel & Drum Co
Newark, Essex County

I. Water Well Records

Location	Owner	Year Drilled	Screen Setting or Depth of Casing	Total Depth	g/m Yield	Formation
26-22-143	Irvington Smelting & Ref.Wks.	1953	71	209	192	Trb
26-22-143	"	1953	62'4"	304	300	"
26-22-145	Associated Mech.Devices	1960	83	250	80	"
26-22-149	Gallo Asphalt Co.	1961	107	201	200	"
26-22-213	Krueger Brewing Co.			656	435	"
26-22-228	Smith & Smith Funeral Parlor			776	25	"
26-22-234	U.S. Navy			565	39	"
26-22-237	Conmar Corp.			300	450	"
26-22-262	National Lock Washer Co.			800	100	"
26-22-275	Linde Air Products Co.	1954	44'5"	500	124	"
26-22-293	New York Port Authority	1968	60	370	260	"
26-22-322	Standard Bitulithic Co.	1964	89'11"	406	360	"
26-22-327	Pfeiffer, H.			505	12	"
26-22-333	Arkansas Co., Inc.	1965	72'9"	400	65	"
26-22-333	Ronson Metals Corp.	1965	80	300	220	"
26-22-334	Wilson, H.A. Co.			778	8	"
26-22-345	Chem-Fleur	1965	97	306	200	"
26-22-355	Englehard Ind., Inc.	1966	54/79'8"	428	167	"
26-22-355	"	1965	80'7"	400	401	"
26-22-356	"	1966	78.5/92	495	4	"
26-22-368	Rutherford & Delaney Hldg.Co.	1956	42	220	100	"
26-22-411	Bristol Meyers	1967	49	500	159	"
26-22-418	Dillon-Beck Mfg. Co.			379	100	"
26-22-449	Elizabethtown Water Co.			400	550	"
26-22-463	Orbis Products Corp.	1958	157	350	12	"
26-22-517	Pennick, S.B. Co.	1961	64'10"	585	24	"
26-22-518	Pure Carbonic			600	30	"
26-22-546	Black Diamond Grit Co.	1960	92	265	150	"
26-22-574	Londat Aetz Fabric Co.	1965	50	600	30	"
26-22-574	Elizabeth Abbatoir			641	75	"
26-22-744	Morey LaRue Laundry			700	15	"
26-22-745	"			600	14	"
26-22-785	Stevenson Car Co.			300	95	"
26-22-786	Feldman Brothers			805	54	"
26-22-795	Reichold Chemical Co.	1967	39'6"	400	415	"
26-22-828	Singer Mfg. Co.			1200	90	"
26-22-833	General Chemical Co.	1965	106	500	70	"
26-22-842	Clauss Bottling Works			500	50	"
26-22-847	Elizabethtown Gas & Light			300	0	"
26-22-852	Riker Motor Co.			500	0	"
26-22-854	Thomas & Betts Co., Inc.			500	264	"

J. Geodetic Control Survey monuments described
Index Map 26; adjacent Index Map 31

A. Elizabeth

B. Arthur Kill-Elizabeth, Elizabeth Channel, Morses Creek; Passaic-Lower Passaic

C. 1. Newark WSO AP - Detailed meteorologic data

2. Map No.	Location	Period of Record
67	Elizabeth River at Irvington	1931-1938
68	Elizabeth River at Nye Ave., Irvington	7/23/38
72	Elizabeth River at Elizabeth	1921-
3. 262	Passaic River at Harrison	1967-1971
272	Elizabeth River at Morris Ave., Elizabeth	1964-

Water Quality Standards: (explained in Atlas Sheet description)
FW3, TW2 except where classified TW3

D. Brunswick Formation (Trb), Stockton Formation (Trs), Diabase (Trdb)

E. 1. Physiographic Province: Piedmont
Subdivision: Triassic Lowlands
Major Topographic Features: Wisconsin Terminal Moraine, Red Sandstone Plain, Hackensack Meadows, Newark Bay, Palisades Ridge
Elevations (ft.above sea level): ridges 300, valleys 0
Relief (ft.): 200

2. a. Normal Year: 44"
Dry Year: 36"
Wet Year: 53"

b. January: 32°F
July: 74°F

c. 243 days. Last killing frost: 4/15; first killing frost 10/20

F. Essex County:
Weequahic Park
Union County:
Elizabeth River Park
Warinanco Park

H. Boxwood Hall/Boudinot Mansion, Elizabeth (State Owened)

26-13-598	Erie Railroad			184	200	Trs
26-13-598	"			182	4	Trb
26-13-615	Keystone Metal Finishers	1968	20	200	312	"
26-13-642	"	1950	18	200	76	"
26-13-655/6	"	1960	21	150	150	Trs
26-13-668	Kiesewetter			380	0	Trdb-Trs
26-13-695	North Bergen Realty Co.			72	90	Q
26-13-775	Fairmount Chemical Co.	1965	114	300	300	Trb
26-13-775	United Shellac Co.			475	200	"
26-13-921	Miller & Co.			135	925	Q
26-13-924	DeAngelis Packing Co.	1948		45	0	"
26-13-983	Mehl, John & Co.	1913		1020	150	Trdb
26-13-983	"	1923		1050	40	"
26-13-984	Mountain Ice Co.			950	0	Trdb-PS
26-13-987	Steel Laundry Co.			1028	130	" "
26-13-994	General Refrigerator			1350	0	Trs-PS
26-13-995	Columbia Amusement Park			200	100	Trs

J. Geodetic Control Survey monuments described
Index Maps 21,26; adjacent Index Map 16

SUBJECT TO REVISION

WATER WITHDRAWAL POINTS AND NJGS CASE INDEX SITES WITHIN 5.0 MILES OF:

LATITUDE 404356
LONGITUDE 740730

DRAFT

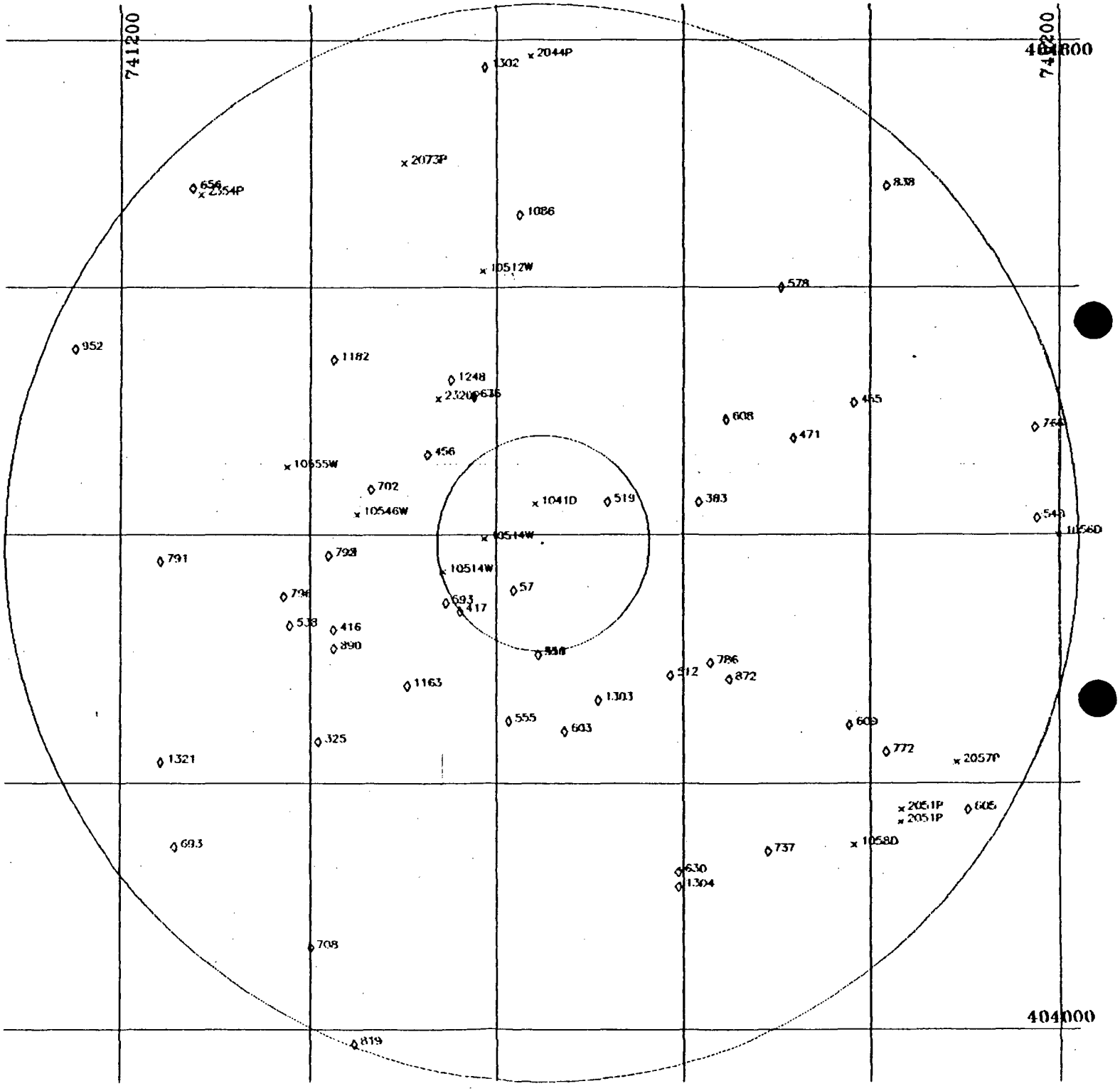
SCALE: 1:63,360
(1 Inch = 1 Mile)

× WATER WITHDRAWAL POINTS
◊ NJGS CASE INDEX SITES
1 MILE AND 5 MILE RADII INDICATED

NJGS CASE INDEX DATA RETRIEVED FROM:
NEW JERSEY GEOLOGICAL SURVEY
ON 12/22/87

PLOT PRODUCED BY:
NJDEP
DIVISION OF WATER RESOURCES
BUREAU OF WATER ALLOCATION
CN-029
TRENTON, NJ 08625

DATE: 10/08/88



SUBJECT TO REVISION

NUMBER	NAME	SOURCEID	LOCID	LAT	LON	LLACC	DISTANCE	COUNTY	MUN	DEPTH	GEO1	GEO2	CAPACITY
1041D	AMERICAN REF-FUEL COMPANY	175 WELL	POINTS	404415	740735	F	0.4	13	14	35	GEOD		250
1051W	V.H. SWENSON CO., INC.	2602717	1	404608	740809	F	2.6	17	07	400	GTRB		150
1054W	RONSON METALS CORP.	2603406	1	404358	740808	T	0.6	13	14	300	GTRB		150
	RONSON METALS CORP.	2604993	3	404342	740825	T	1.0	13	14	165			100
1054W	PUBLIC SERVICE ELECTRIC & GAS	46000103	1	404410	740930	F	1.8	17	04	216	GTRB		250
1055W	NEW JERSEY BELL TEELEPHONE	2603173	1	404433	741015		2.5	13	14	215	GTRB		60
1058D	NEWPORT CITY DEV. CO.			404400	740200	F	4.8	17	06				1000
1059D	PORT LIBERTE PARTNERS			404130	740410	F	4.0	17	06				200
3044P	GRAND UNION CO.	46000002		404752	740778	S	4.5	03	39	300	GTRB		60
3051P	LIBERTY HILLSIDE ASSOC.	46000077	STANDBY	404147	740341		4.2	39	07	275	GTRB		250
	LIBERTY HILLSIDE ASSOC.	46000078	STANDBY A	404141	740341		4.2	39	07	186	GTRB		250
	LIBERTY HILLSIDE ASSOC.	46000079	MAIN B	404141	740341		4.2	39	07	400	GTRB		465
	LIBERTY HILLSIDE ASSOC.	2602418	MAIN D	404141	740341		4.2	39	07	400	GTRB		350
3057P	SPINNERIN YARN CO., INC.	46000174	1	404210	740705	F	4.4	03	59	230	GTRB		120
3073P	INTERNATIONAL MINERALS & CHEM.	46000092	1	404700	740700	T	3.8	13	01	352	GTRB		100
	INTERNATIONAL MINERALS & CHEM.	46000093	2	404700	740700	T	3.8	13	01	400	GTRB		150
	INTERNATIONAL MINERALS & CHEM.	2605113	3	404700	740700	T	3.8	13	01	400	GTRB		150
3220P	HONEYCOMB PLASTICS CORP.	46000182	1	404506	740838	S	1.7	17	07	500	GTRB		210
	HONEYCOMB PLASTICS CORP.	2602384	2	404506	740838	S	1.7	17	07	700	GTRB		500
3254P	ESSEX COUNTY DEPT. OF PARKS	2604694	2	404645	741110	T	4.6	13	14	450	GTRB		180

Number of Observations: 20

 NJGS CASE INDEX SITES WITHIN 5.0 MILES OF 404035 LAT. 740730 LON. AS OF 12/22/87 (IN ORDER BY SITE NUMBER) - 10/06/88

SITENUM	NAME	LAT	LON	DISTANCE	CONTAM	FMCODE1	FMCODE2	STATUS1	STATUS2
37	ASHLAND CHEM., NEWARK, ESSEX CO.	404333	740749	0.5	53	130	3070	1	
325	FRONTAGE ROAD DRUM DUMP, NEWARK, ESSEX CO.	404230	740755	2.8	1	0130	0	1	B
383	PSE&G, KEARNY, HUDSON CO.	404416	740530	1.5	38	130	3070	0	
410	INLAND CHEM., NEWARK, ESSEX CO.	404302	740733	1.0	00	3070	0	9	
416	ALBERT STEEL DRUM/ PRENTISS DRUG, NEWARK, ESSEX CO. (DIOXIN)	404314	740545	2.1	72	100	130	1	E
417	TROY CHEM., NEWARK, ESSEX CO.	404323	740624	1.0	38	130	3070	1	
455	DIAMOND SHAMROCK, S. KEARNY, HUDSON CO.	404504	740410	3.2	35	100	101	1	
456	CONRAIL-MEADOWS YARD, KEARNY, HUDSON CO.	404409	740345	1.4	52	101	130	1	
471	KOPPERS, KEARNY, HUDSON CO.	404447	740449	2.5	1	100	130	9	
512	ROOSEVELT DRIVE-IN (DAYLIN/GRACE), JERSEY CITY, HUDSON CO.	404252	740608	1.7	39	100	101	5	B
519	SYNOON RESINS, KEARNY, HUDSON CO.	404416	740548	0.7	00	100	3070	1	G
538	J.L. ARMITAGE + CO., NEWARK, ESSEX CO.	404316	741013	2.5	0	130	3070	1	
548	CONRAIL YARD, HOBOKEN, HUDSON CO.	404406	740214	4.6	52	100	110	1	
551	SUNMARK IND., NEWARK, ESSEX CO.	404702	740733	1.0	63	130	3070	9	
555	CENTRAL STEEL DRUM, NEWARK, ESSEX CO.	404230	740752	1.7	1	130	3070	0	
578	CONRAIL SECAUCUS, HUDSON CO.	404600	740457	3.3	1	100	102	1	
592	FEDERATED METALS, NEWARK, ESSEX CO.	404327	740833	1.1	0	130	3070	9	
603	TEXACO TERMINAL, NEWARK, ESSEX CO.	404225	740716	1.8	53	130	3070	9	
605	PITTSTON PETROLEUM, JERSEY CITY, HUDSON CO.	404147	740258	4.7	53	100	101	8	
608	STANDARD CHLORINE, KEARNY, HUDSON CO.	404456	740533	2.1	39	100	101	0	
609	GARFIELD AVE., 880, JERSEY CITY, HUDSON CO.	404238	740413	3.3	39	100	102	1	
630	MCKAY CHEMICAL CORP., BAYONNE CITY, HUDSON CO.	404117	740603	3.3	00	100	0	9	
635	80-LISTER AVENUE, NEWARK, (DIOXIN CASE), ESSEX CO.	404507	740815	1.5	72	100	0130	1	G
656	COOPER IND (FORM.MCGRAW EDISON), BELLEVILLE, ESSEX CO.	404648	741115	4.6	00	3070	130	1	C
676	100 LISTER AVE (DIOXIN), NEWARK, ESSEX CO.	404507	740815	1.5	72	0100	0130	1	G
692	J.T. BAKER, PHILLIPSBURG, WARREN CO.	404129	741126	4.4	00	130	8010	1	A
702	HARRISON COAL GAS SITE, HUDSON CO.	404422	740721	1.7	70	0110	3070	1	C
703	KARKOWSKI RD. LANDFILL, ELIZABETH, UNION CO.	404040	741030	4.3	50	100	3070	0	
707	PJP LANDFILL, JERSEY CITY, HUDSON CO.	404127	740506	3.5	58	100	101	9	
766	CARNIVAL SPRAYING CO., INC, HOBOKEN, HUDSON CO.	404452	740215	4.7	63	0100	0100	1	B
772	COLUMBIA PAINT, INC., JERSEY CITY, HUDSON CO.	404215	740350	3.7	00	0100	0110	1	B
786	STELLER INSTRUMENTS, JERSEY CITY, HUDSON CO.	404258	740543	1.9	35	0100	3050	1	B
791	GENERAL ELECTRIC CO-NEWARK LAMP PLANT	404347	741135	3.6	00	0100	3070	1	B
792	GEORGIA-PACIFIC CORP--CASTING OPER, NEWARK, ESSEX CO.	404350	740948	2.0	00	0110	3070	1	B
793	GEORGIA-PACIFIC CORP--POLYMER MATE, NEWARK, ESSEX CO.	404350	740948	2.0	00	0110	3070	1	B
796	C & R METALLIZING CO, INC., NEWARK, ESSEX CO.	404330	741017	2.5	00	0110	3070	1	B
819	FOLDEX, INC - ELIZABETH PLANT, UNION CO.	403953	740932	5.0	00	0100	0100	1	B
838	SQUARE D CO. SECAUCUS, BERGEN CO.	404649	740350	4.6	00	0110	3070	1	B
872	TEXTILE FRUGTERS, JERSEY CITY, HUDSON CO.	404250	740531	2.1	63	0100	3050	1	B
890	CHEM-FLEUR, NEWARK, ESSEX CO.	404705	740945	2.2	00	0110		1	B
952	ORANGE WATER DEPT., ORANGE, ESSEX CO.	404530	741230	4.7	00	0130	3070	1	C
1028	G M I CONCRETE, NORTH ARLINGTON, BERGEN CO.	404635	740745	3.0	53	0100	0	1	B
1103	C+R ISLAND-CONRAIL TERMINAL, NEWARK, ESSEX CO.	404247	740858	1.8	52			3	
1132	FRANKLIN PLASTICS, KEARNY, HUDSON CO.	404525	740945	2.6	34	0100	3070	1	B
1248	GUIGNON & GREEN, KEARNY, HUDSON CO.	404515	740630	1.7	53	0130	0101	1	C
1300	RESEARCH ORGANIC/INORGANIC CHEM CORP,BELLEVILLE, ESSEX CO.	404747	740503	4.5	00	0130	3070	1	E
1303	DOYERS POINT, JERSEY CITY, HUDSON CO.	404240	740624	1.5	39	0101	0130	1	A
1304	ROUTE 185, JERSEY CITY, HUDSON CO.	404110	740603	3.4	39	0130	0101	1	B
1321	J.F.HENRY CHEMICAL CO., NEWARK, ESSEX CO.	404210	741125	4.1	63	0110	3070	1	B

Number of Observations: 49

RCRA Enforcement Inspection

Bayonne Barrel and Drum
Newark, New Jersey

NJD009871401

June 2, 1988

Participating Personnel:

U.S. Environmental Protection Agency

M. Ferriola, Environmental Scientist
R. Coleates, Environmental Scientist
R. Morrell, Geologist
D. Dugan, Environmental Scientist
J. Wilk, Environmental Scientist

Bayonne Barrel and Drum

Frank Langella, Company owner

Report Prepared by:

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Source Monitoring Section

Approved for the Director by:

Richard D. Spear, Chief
Surveillance and Monitoring Branch

ATTACHMENT A-1

Bayonne Barrel and Dr
Newark, New Jersey

June 2, 1988

RCRA ENFORCEMENT INSPECTION

Objective

A RCRA sampling inspection was conducted at Bayonne Barrel and Drum (BBD) on June 2, 1988, by members of EPA's Region II, Environmental Services Division. This investigation was requested by the Hazardous Waste Compliance Branch (HWCB) in New York. The scope of this inspection was to determine if BBD is actively storing hazardous wastes on site and establish present site conditions as compared to the original sampling investigation performed by EPA in 1984. A general site map (Figure 1) is attached which illustrates the approximate sampling locations.

Survey Participants

Frank Langella, Company owner - Bayonne Barrel and Drum

Tom Colligan, Operations Manager - Interwaste Services Company (ISCO)
James Wilson, Field Engineer - ISCO
Andy Kondracki, Environmental Controls Manager - ISCO
Mike Young, ISCO

Mike Ferriola, Environmental Scientist - U.S. EPA
Richard Coleates, Environmental Scientist - U.S. EPA
Robert Morrell, Geologist - U.S. EPA
David Dugan, Environmental Scientist - U.S. EPA
John Wilk, Environmental Scientist - U.S. EPA

* Personnel from Interwaste Services Co. (ISCO) were contracted by BBD to collect split samples and observe EPA sampling activities.

Discussion

On June 2, 1988, a RCRA sampling inspection was conducted at Bayonne Barrel and Drum, located at 150 Raymond Boulevard in Newark, New Jersey. Two previous sampling inspections were attempted. However, due to an access denial on May 12 and inclement weather on May 19, those inspections were not completed. Access was denied on May 12 by BBD's attorney, Damon Sadita, after being on site for approximately one hour and actively engaged in sampling. EPA was informed by their attorney that investigative personnel (EPA) should not be on site. This arrangement was made as per an agreement with the Department of Justice in Washington, D.C., since the site was already in litigation. A second sampling visit was scheduled, after consent by EPA and BBD attorneys, exactly one week later on May 19, 1988. Due to excessive rain the previous 36 hours, sampling had to be postponed once again.

ATTACHMENT A-2

Site Description

Currently, BBD is an inactive drum reconditioning facility which has filed for bankruptcy under Chapter 11 and is only staffed by a few maintenance/security people. The plant has undergone some surficial cleaning/housekeeping which includes the arrangement of empty drums in orderly rows, grading of empty lots on the south side of the buildings, and removal of most equipment from the building interiors. In addition, the ash pile on the southwest corner of the property has been covered with a sheet of clear plastic. During EPA's initial attempt to sample, the ash pile was found uncovered. However, on a second sampling attempt, the contractor representing BBD had covered the ash pile with several rolls of clear sheet plastic. During the third and actual sampling inspection, the pile remained covered.

Even though the plant "appears aesthetically cleaner", there remain a few areas which appear grossly contaminated. The drum and ash storage room contains a large ash pile from incineration activities. Also, approximately 150 drums remain which contain ash or aqueous materials. A few drums had holes punched in their sides which allowed the contents to stain the surrounding floor space. A couple of drums had been inverted to prevent their contents from leaking and others were severely dented and/or crushed. Most drums contained ash which looked similar in nature to the ash pile in the middle of the room. See the attached photographs for illustrations. Approximate building locations and sampling sites are depicted in Figure 1. In addition, an ash pile remains in the courtyard between the incinerator and the furnace room building. The ash residue was multicolored, as shown in the attached photographs.

Sampling locations and methodology

In order to fulfill the objectives of this investigation, a total of seven predetermined locations were selected. The sampling network and rationale was based upon a previous sampling inspection by EPA (2/84) and new locations proposed by the HWCB during a presurvey walk-through conducted on April 15, 1988. Based upon this information, the following points were selected:

1 - Furnace room building
2 - Courtyard area
3 - Drum and ash storage room (near incinerator)
4 - Waste ash pile (near rows of drums)
5 - Oil separator trench
6 - Pump House (near oil separator trench)
7 - Underground tank (near toluene pump)

Approximate sample locations are depicted in Figure 1 which correspond to the sample numbering system above. The analyses requested included EP Toxicity (metals only), volatile organic analysis (VOA), non-volatile organic analysis (NVOA), PCB's, and also pH for aqueous samples. In addition, ignitability was analyzed on the drum sample containing an aqueous solution (sample # 112213).

The following is a list of sample identification numbers, corresponding sample locations, and descriptions of collection techniques:

Sample #112201 - This sample was collected from the floor of the furnace room building as depicted in picture #10. The ash sample was collected at random from several locations using a dedicated polypropylene scoop. The sample was then mixed in a stainless steel tray to form a composite sample, which was subsequently split for EPA personnel and the BBD contractor. The stainless steel tray was lined with new "Whatman Benchcoat" paper each time a sample for ash was collected to prevent cross contamination among different sampling locations.

Sample #112202 - Courtyard area ash sample collected at random using the same techniques as listed in sample #112201. Photographs #5 - 9 illustrate the sample location and collection techniques. Make special notice of the various colors encountered in the ash pile and sample collected.

Sample #112203 - Drum and Ash storage room ash sample collected in a manner identical to that listed in sample #112201. Level B personal protective equipment (PPE) was worn in this area due to the presence of hazardous organic vapors, as indicated by air monitoring equipment. Pictures #15-16 illustrate sampling technique and level of protective equipment required.

Sample #112204 - This sample number represents the "WEST" half of the waste ash pile near the drum storage area. An imaginary line was drawn through the ash pile to delineate an "EAST" and "WEST" half, for the purpose of sampling only. Figure 1 shows the relative location of the ash pile and illustrates the approximate boundary drawn to delineate the two halves. Photographs #17 and 19 illustrate the entire waste ash pile and sample collection in the "WEST" half, respectively. Level C PPE was worn during sample collection and compositing. Since the ash pile was covered with polyethylene plastic sheeting, holes were cut at random to enable sample collection. Samples were collected using a dedicated polypropylene scoop and throughly mixed in a stainless steel tray to form a composite sample.

Sample #112205 - Aqueous samples were collected from the oil separator trench using an I-Chem Series 300, one quart glass jar attached to an aluminum rod and clamp. Samples were poured directly from the glass jar into the respective sample containers.

Sample #112206 - Aqueous samples were collected from the pump house using the same techniques mentioned in sample #112205. Picture #1 illustrates the pump house and rod/clamp used for sample collection. A duplicate sample, #112211, was also collected at this location.

Sample #112207 - Aqueous samples were collected from an underground tank near the toluene pump. The sample was collected by taping an I-Chem Series 300 glass jar to an aluminum rod. The sample was collected in this manner due to the size of the access standpipe. In addition, the aluminum rod was shaped to fit the angled opening of the tank. See picture #3, which illustrates sampling of the underground tank.

Sample #112208 - In addition to collecting ash samples from the courtyard, aqueous samples were also collected as depicted in photgraph #4. Ponded water samples were collected in a low lying area adjacent to the courtyard ash pile and incinerator. Sample collection technique was by direct filling an I-Chem Series 300 glass jar and pouring into the appropriate sample containers.

Sample #112212 - This sample number represents the "EAST" half of the waste ash pile near the drum storage area. Photograph #18 depicts sampling the "EAST" half of the ash pile while wearing Level C PPE. Sample collection techniques were the same as in sample #112204. A series of random grab samples were collected using a dedicated polypropylene scoop and then composited in a stainless steel tray. After the sample was throughly mixed, the respective sample containers were filled.

Sample #112213 - An aqueous sample was collected from a "RED" drum in the drum and ash storage room as depicted in photographs #11 - 12. Level B PPE was worn due to the presence of high concentrations of unknown organic contaminants. The drum was sampled using a precleaned, dedicated teflon bailer. Pictures #13 - 14 indicate the particular red drum which was sampled and other drums in the immediate area. Note the condition of the drums in all four photographs. Most of the drums contained ash which looked similar in nature to the ash pile in the center of the room. However, some of the drums contained liquids of unknown content. Many of the containers were in very poor condition, some with holes and a few inverted to prevent their contents from leaking onto the floor.

All samples were collected in accordance with established EPA, Region II protocols. Standard EPA Chain of Custody procedures were employed throughout this inspection and a receipt for samples was signed by the facility representative (ISCO), as required under section 3007 (a) of RCRA. All samples collected by EPA were split with ISCO during this investigation (containers for BBD samples were provided by ISCO). EPA samples were analyzed at the Region II laboratory in Edison, New Jersey.

Results of Analyses

The results obtained from the samples collected during this investigation are presented in the following tables: Volatile Organics GC/MS scan (Table 1), Non-volatile Organics GC/MS scan (Table 2), and EP TOX Metals (Table 3).

Table 1 presents the volatile organic compounds and concentrations that were detected. The results indicate the presence of volatile organics in all samples collected. Exceptionally high concentrations of volatile organic compounds were found in samples #112212 and #112213. Concentrations ranged from 490 ug/l of trichloroethylene to 10,000,000 ug/l of xylene in those samples.

Table 2 presents the non-volatile organics/PCB compounds and concentrations that were detected. Very high concentrations of non-volatile organics were found in the ash samples, as presented in the attached tables, pages 2a - 2b. In addition, PCB's were found in sample #112212 at 115,400 and 293,970 ug/l for Aroclor 1248 and 1254, respectively. High concentrations of non-volatile organics were also found in the drum sample, #112213.

Table 3 presents the results of analyses for the hazardous waste characteristic of EP Toxicity (metals). The maximum concentration allowed for cadmium (1.0 mg/l) was exceeded in three of the samples collected (#112201, 112203, and 112204). All other EP Toxicity metals contaminants were below the maximum limit allowed, as presented in Table 3.

Aqueous samples were analyzed for pH, and in addition, ignitability analysis was performed on the drum sample. Results of these analyses show that none of the samples analyzed met the criteria of corrosivity or ignitability, as per 261.21 and 261.22. Results are presented below:

Characteristic of Corrosivity

Sample #	ph (SU)
112205	7.37
112206	6.59
112207	6.28
112208	6.70
112213 (drum)	10.9

Characteristic of Ignitability

Sample #	Flash point
112213	> 145°F

ATTACHMENT 4-6

Findings and Conclusions

Based upon the sampling results of this investigation and a visual inspection of the site, Bayonne Barrel and Drum is in violation of existing RCRA and TSCA regulations. Analytical results indicate that the waste ash pile, drum and ash storage room ash, and furnace room ash are a RCRA hazardous waste in accordance with 40 CFR Part 261.24. The ash exhibits the characteristic of EP Toxicity for cadmium (D006).

Results of PCB analyses show concentrations for Aroclor 1248 and 1252 to be 115 and 293 mg/l, respectively. This is a violation of TSCA regulations 40 CFR Part 761.60.

The waste ash pile was still in violation of 40 CFR Part 265, Subpart L (waste piles) during the initial site visit on May 12, 1988. The pile was subsequently covered by sheet plastic on May 19, 1988. However, a containment system to prevent and collect run-off or eliminate a discharge to groundwater does not exist.

The drum and ash storage room contained many drums, approximately 100-150, which were not marked as a hazardous waste and were apparently stored in excess of 90 days.

In addition, numerous organic compounds were found throughout the site in varying concentrations. All results are listed in Tables 1-3.

TABLE 1
BAYO[redacted] BARREL AND DRUM, NEWARK, NEW [redacted]SEY
VOLATILE ORGANICS GC/MS SCAN
JUNE 2, 1988

Ash samples

PARAMETER/SAMPLE#	ash from floor of furnace room #112201	ash - (courtyard) #112202	ash (drum/ash storage room) #112203	ash pile #112204	ash pile #112212
Benzene					
Carbon Tetrachloride			28 M		
Chlorobenzene			540 M		
1,2-dichloroethane					
1,1,1-trichloroethane	96 M		340 M		64 M
1,1-dichloroethane					
1,1,2-trichloroethane					680 M
1,1,2,2-tetrachloroethane					
Chloroethane					
Chloroform		28 J	60 M		24 M
1,1-dichloroethylene					
1,2-trans dichloroethylene					
1,2-dichloropropane					
1,3-dichloropropylene					
Ethylbenzene	140 M	570	1500	100 M	5200
Methylene chloride					
Methyl chloride					
Methyl bromide					
Bromoform					
Dichlorobromomethane					
Chlorodibromomethane					
Tetrachloroethylene		80 M	1200	140 M	1300
Toluene	310 M	1300	2700	200 M	12,000
Trichloroethylene	82 M	46 M	550	110 M	490
Vinyl chloride					
Xylene		1200	3200		4600
Styrene					2500

All concentrations in ug/kg.
M = above the detection limit, but below the level of quantification
J = estimated value

ATTACHMENT 4-1

TABLE 2 TABLE 1
BAYONNE BARREL AND DRUM, NEWARK, NEW JERSEY
VOLATILE ORGANICS GC/MS SCAN
JUNE 2, 1988

Aqueous samples

PARAMETER/SAMPLE#	aqueous (oil sep. trench) #112205	aqueous (pump house) 112206	Dup. 112211	aqueous (U/G tank) #112207	aqueous (ponded water) #112208	aqueous (drum) #112213
Benzene			4.4			92,000
Carbon Tetrachloride						
Chlorobenzene		9.4	7.3			78,000
1,2-dichloroethane						
1,1,1-trichloroethane		5.2	4.3			
1,1-dichloroethane		11	8.8			
1,1,2-trichloroethane		1.3M	1.0M			
1,1,2,2-tetrachloroethane						
Chloroethane						
Chloroform	2.6 M	1.6	5.5	(10)		
1,1-dichloroethylene						
1,2-Trans dichloroethylene	3.7 M	55	41	2.3		
1,2-dichloropropane						
1,3-dichloropropylene						
Ethylbenzene		130	110	1.8 M	14 M	1,200,000
Methylene chloride						
Methyl chloride						
Methyl bromide						
Bromoform						
Dichlorobromomethane						
Chlorodibromomethane						
Tetrachloroethylene		2.2M	1.6M			62,000
Toluene	2.6 M	660	540	0.4 M	600 J	2,400,000 J
Trichloroethylene		4.5	3.4	0.5 M		
Vinyl chloride		18	12			
Xylene	5.0 M	140	220	4.1 J	60 J	10,000,000
4-methyl-2-pentanone		21	17			
Styrene			38			

All concentrations in ug/l.
M = above the detection limit, but below the level of quantification
J = estimated value

ATTACHMENT 4-9

Ash samples

PARAMETER/SAMPLE #	ash (furnace room) 112201	ash (courtyard) 112202	ash (drum/ash storage room) 112203	ash pile 112204	ash pile 112212
2-chlorophenol					
2-nitrophenol					
phenol		2350 J	104,400 J		
2,4-dimethylphenol			2,350 M		
2,4-dichlorophenol					
2,4,6-trichlorophenol					
p-chloro-m-cresol					
2,4-dinitrophenol					
4,6-dinitro-o-cresol					
pentachlorophenol					
4-nitrophenol					
1,3-dichlorobenzene					
1,4-dichlorobenzene				140 M	
1,2-dichlorobenzene		330 M	5,780 M	400 M	
hexachloroethane					
hexachlorobutadiene					
1,2,4-trichlorobenzene	490 M	620 M	49,200 J	2820 J	
napthalene	2600 J	9910 J	15,050 J	6430 J	1210 M
bis(2-chloroethyl) ether					
bis(2-chloroethoxy) methane			5,080 M		
isophorone		6730 J	5,060 M	1060 M	
nitrobenzene					
acenaphthylene		1250 M	700 M	2850 M	
acenapthene		130 M	3,700 M	450 M	
fluorene		1520 M	7,375 J	490 M	
hexachlorobenzene					
phenanthrene	1140 M	1880 J	37,380 J	3080 M	220 M
anthracene	230 M	1850 M	3,550 M	1240 M	
fluoranthene	650 M	2490 M		1970 J	140 M
aniline	160 M				
2-methyl napthalene	1090 M	3370 J	17,180 J	4490 J	460 M
2-methyl phenol			9,600 J		
4-methyl phenol			20,000 J	1140 J	
biphenyl			20,000 J		
dimethyl diphenyl urea			37,200 J	7200 J	
n-nitrosodiphenylamine				770 M	180 M
3,3-dichlorobenzidene				520 M	
benzoic acid				5710 J	
hexane diisocyanate				12,100 J	

All concentrations in ug/kg.
M = above the detection limit, but below the level of quantification
J = estimated value

TABLE 2
BAYONNE BARREL AND DRUM, NEWARK, NEW JERSEY
NON-VOLATILE ORGANIC GC/MS SCAN
JUNE 2, 1988

Ash samples

PARAMETER/SAMPLE#	ash (furnace room) #112201	ash (courtyard) #112202	ash (drum/ash storage room) #112203	ash pile #112204	ash pile #112212
dimethyl phthalate		230 M	1750 M	170 M	
diethyl phthalate	380 M	890 M	102,930 J	1100 M	
di-n-butyl phthlate	5200 J	35,920 J	90,150 J	6830 J	1980 M
butyl benzyl phthalate	2500 M	8,070 J	67,530 J	1290 M	1780 M
di-n-octyl phthalate	340 M		5850 M		50 M
bis(2-ethylhexyl) phthalate		51,060 J	259,230 J	39,960 J	
pyrene	660 M	480 M	7500 J	3610 J	200 M
chrysene	160 M	630 M	1950 M	2070 M	
1,2-benzanthracene	110 M	400 M	1055 M	1850 M	
4-chlorophenyl phenyl ether					
benzo(a) pyrene		2450 M			
1,12-benzoperylene					
benzyl alcohol		710 M	24,730 J	2570 J	
2-methyl alcohol					
dibenzofuran	250 M	750 M	3450 M	360 M	
toluene diisocyanate		340,000 J			
phthalic anhydride		56,000 J			1500 J
naphthalene isocyanate		67,000 J			
2,6 dinitrotoluene					
2,4-dinitrotoluene				120 M	
1,2-diphenylhydrazine		1560 M			110 M
3,4-benzofluoranthene	280 M	2950 M			
11,12-benzofluoranthene					
dihydrotrimethylphenyl ind.				33,000 J	
phenol,2,4-bis(1,1-dimethyl)				4590 J	
ylangene			12,500 J		
homosolate			123,000 J	5700 J	
cholestanol					
PCB-1016					
PCB-1221					
PCB-1232					
PCB-1242					
PCB-1248					293,970
PCB-1254					115,400
PCB-1260					

All concentrations in ug/kg.
J = Estimated value.
M = Above the detection limit, but below the level of quantification.

ATTACHMENT 4-11

TABLE 2
BAYONNE BARREL AND DRUM, NEWARK, NEW JERSEY
NON-VOLATILE ORGANICS GC/MS SCAN
JUNE 2, 1988

Aqueous samples

PARAMETER/SAMPLE #	aqueous (oil sep trench) #112205	aqueous (pump house) 112206	Dup. 112211	aqueous (tube tank) #112207	aqueous (ponded water) #112208	aqueous (drum) #112213
2-chlorophenol						
2-nitrophenol						
phenol	1.3 M		3.2 M		1.4 M	
2,4-dimethylphenol		7.3	11.2 M	0.2 M	6.2	
2,4-dichlorophenol				1.1 M		
2,4,6-trichlorophenol						
p-chloro-m-cresol						
2,4-dinitrophenol						
4,6-dinitro-o-cresol						
pentachlorophenol						
4-nitrophenol						
1,3-dichlorobenzene	1.1 M	0.4 M				2610
1,4-dichlorobenzene	4.2 M	1.5 M		1.6 M		34,200
1,2-dichlorobenzene	1.2 M	1.6 M		0.2 M		167,140
hexachloroethane						
hexachlorobutadiene						
1,2,4-trichlorobenzene	0.8 M	0.5 M			0.2 M	393
napthalene		11.7	14.7 M			28,380
bis(2-chloroethyl) ether						
bis(2-chloroethoxy) methane						
isophorone		2.4			2.8	109
nitrobenzene						
acenaphthylene					2.5 M	
acenapthene						137
fluorene		1.3 M	7.8 M		0.5 M	
hexachlorobenzene						
phenanthrene	0.3 M	2.7 M	18.7 M	0.2 M	2.8 M	115 M
anthracene					1.6 M	
fluoranthene		0.8 M		2.2 M	4.2	
aniline						
2-methyl napthalene			11.7 M			61,080 J
2-methyl phenol	0.8 M	20.1 J	18.5 M			
4-methyl phenol		11.3 J	8.0 M		1.9 M	
benzoic acid			54.3 M		6.2	
methylbenzene sulfonamide	179 J				75 J	
methyl ethylbenzene		25.3 J				

All concentrations in ug/l.
M = above the detection limit, but below the level of quantification
J = estimated value

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TABLE 2
BAYONNE BARREL AND DRUM, NEW[illegible]
NON-VOLATILE ORGANIC GC/MS SCAN
JUNE 2, 1988

Aqueous samples

PARAMETER/SAMPLE#	aqueous (oil sep. trench) #112205	aqueous (pump house) 112206	Dup. 112211	aqueous (tote tank) #112207	aqueous (ponded water) #112208	aqueous (drum) #112213
dimethyl phthalate		0.4 M				
diethyl phthalate						
di-n-butyl phthlate		7.2				
butyl benzyl phthalate	1.1 M	10.6 J	46.3J		7.1 M	
di-n-octyl phthalate		1.6 M	3.7M		0.7 M	
bis(2-ethylhexyl) phthalate	1.4 M	13.5 J	106.8J	4.7 J	21.7 J	
pyrene		1.3 M	7.9M	0.1 M	6.5	
chrysene	0.1 M	0.2 M	1.1M		1.8 M	
1,2-benzanthracene		0.1 M	0.5M		0.7 M	
4-chlorophenyl phenyl ether						
benzo(a) pyrene	0.2 M	0.2 M			2.8	
1,12-benzoperylene		0.5 M			4.3	
benzyl alcohol		5.3 J	3.1M			
2-methyl alcohol						
dibenzofuran		0.8 M	2.0M		0.4 M	567
2,6 dinitrotoluene						
2,4-dinitrotoluene		0.6 M				597
1,2-diphenylhydrazine	1.7 M	2.0 M		0.1 M		26.8 M
3,4-benzofluoranthene		0.1 M			2.3 M	
11,12-benzofluoranthene		0.2 M			2.5 M	
n,n-dimethyl n,n-diphenyl urea	52 J					
trimethylbenzene isomers		58.4 J				
trimethyl-1,3 pentanediol		26.3 J				
n-ethyl-4-methylbenzene sulf.		39.3 J				
tetramethyl butylphenol					27 J	
methyl napthalene isomers		5.5 M			1.4 M	
ylangene						
homosolate						
cholestanol		96.6 J	712 J	71 J		
PCB-1016						
PCB-1221						
PCB-1232						
PCB-1242						
PCB-1248						
PCB-1254	0.403					
PCB-1260						

All concentrations in ug/l.
J = Estimated value.
M = Above the detection limit, but below the level of quantification.

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TABLE 3
BAYON[redacted]BARREL AND DRUM, NEWARK, NEW J[redacted]EY
EP TOX METALS DATA
JUNE 2, 1988

SAMPLE #/PARAMETER	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
#112201 (ash)	—	.01 M	2.84	1.16	—	—	4.72	.03 M
#112202 (ash)	.048M	.02 M	1.86	0.257	--	—	1.06	.02 M
#112203 (ash)	—	.04 M	3.53	2.84	.36 M	.15	1.69	.53
#112204 (ash)	—	.04 M	5.02	2.72	--	.0007 M	1.67	.04 M
#112205 (liq)	—	.01 M	0.22M	.027M	—	.0002 M	.1 M	—
#112206 (liq)	.012 M	.02 M	0.45M	—	—	.0003 M	—	.02 M
#112207 (liq)	.013 M	.01 M	—	--	--	—	--	.01 M
#112208 (liq)	—	.01 M	0.48M	—	--	—	--	.02 M
#112211 (liq)	—	.01 M	0.28M	—	—	.0003 M	--	.01 M
#112212 (ash)	—	.01 M	0.846M	.243	—	--	.57	.01 M
#112213 (liq)	—	1.0 M	.62M	—	1.6 M	.004 M	--	2.0 M
Maximum concentration allowed for EP TOX	5.0	5.0	100	1.0	5.0	0.2	5.0	1.0

Sample #112211 was a duplicate to sample #112206.
All concentrations expressed in mg/l.
M = above the detection limit, but below the level of quantification.

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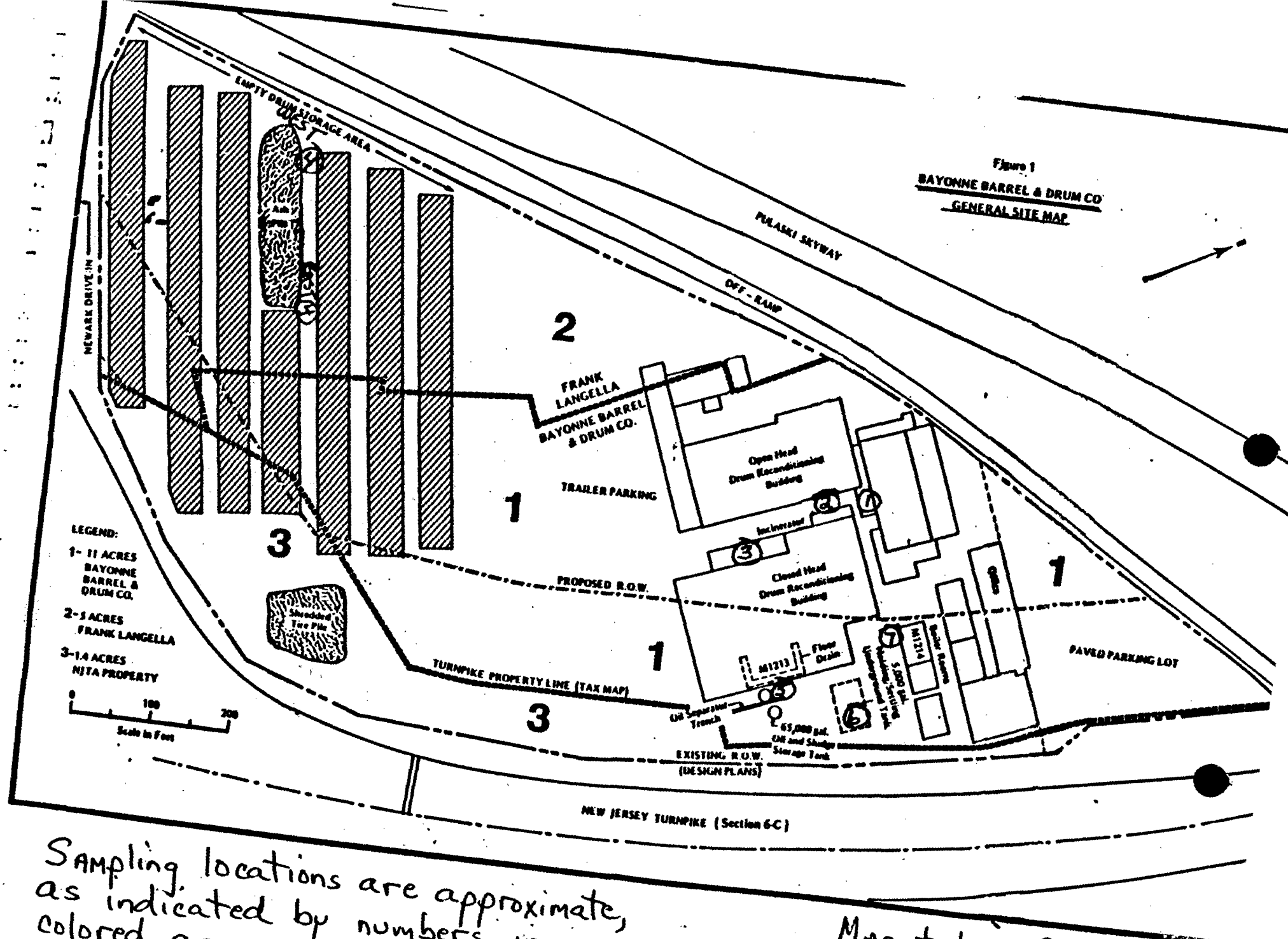

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Sampling locations are approximate, as indicated by numbers in colored areas.

Map taken from Lou... and Assoc. report dated ... for NJ Turnpike Auth...

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Soil + Groundwater Characterization
Dan Raviv. Assoc July 1986

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1.0 Summary of Field Investigations

Four field investigations have been performed by DRAI at Bayonne Barrel and Drum Co., located at 150 Raymond Boulevard in Newark, New Jersey. During these investigations, undisturbed split spoon soil samples, surface sediment samples, and a surface water sample were collected from various locations around the site. Ground water monitoring wells were installed, developed and sampled, and several additional split spoon soil samples were collected from the well borings before the wells were installed. This work was done to establish the quality of soils and ground water at the site. All sample locations are displayed on Figure 2.

The field investigations, discussed below as Field Investigation I, II, III and IV, were performed on: January 18, 1985; October 25-31, 1985; November 27 - December 17, 1985; and January 7, 1986, respectively. All boring and drilling work done at the site was performed by Jersey Boring and Drilling Co., Inc. of Newark, New Jersey. All samples were collected using methods outlined in DRAI Field Procedure Protocols which were submitted with the DRAI Work Plan. Finally, samples were transported for analysis, via a chain of custody, to Gollob Analytical Service Laboratory in Berkeley Heights, New Jersey.

1.1 Field Investigation I - January 18, 1985

On January 18, 1985, DRAI personnel were at Bayonne Barrel and Drum Co. to sample the furnace residue pile. A total of nine split spoon soil samples, BBD1-BBD9, were collected from nine borings (Figure 2). Borings were located at the nodes of an imaginary grid laid out across the residue pile. In addition, four surface soil samples, one from the residue pile (BBD14) and three from the furnace area (BBD11-13), were collected. All samples, except for BBD 10, were analyzed for Polychlorinated Biphenyls (PCB) (Table I.1).

For the purpose of waste classification, a composite sample, BBD10, was created by mixing an equal volume of soil from each of three samples, BBD 2,5 and 8. BBD10 was then analyzed for EP-Toxicity parameters:

(1) Metals:
- (a) Arsenic (As)
- (b) Barium (Ba)
- (c) Cadmium (Cd)
- (d) Chromium (Cr)
- (e) Lead (Pb)
- (f) Mercury (Hg)
- (g) Silver (Ag)
- (h) Selenium (Se)

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(2) Herbicides and Pesticides:
   (a) Endrine
   (b) Lindane
   (c) Methoxychlor
   (d) Toxaphene
   (e) 2,4-D (2,4-Dichlorophenoxyacetic acid)
   (d) 2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)

(These were the required parameters at the time this analysis was requested).

1.2 Field Investigation II - October 25-31, 1985
Just prior to Field Investigation II, the utility locator service associated with Public Service Electric & Gas Company, was contacted for the purpose of marking out the location of any utility lines that may run underneath the property. They, in turn, contacted several other major utilities. DRAI was informed that two lines exist (Figure 1).

During the second field investigation, soil borings were completed by the auger method, in various areas around the site (Figure 2). Boring locations were chosen to provide general information on conditions around the site, as well as specific target areas, such as the furnace residue pile, the furnace area, and the oil storage tanks area.

In order to examine general site conditions, seventy-six samples, composed of seventy-one split spoon soil samples, four surface sediment samples, and one surface water sample, were collected. Nineteen borings were advanced to various depths between one and fifteen feet, and undisturbed split spoon samples were collected at one foot intervals down to a depth of three feet, and at two feet intervals at depths of five, nine and thirteen feet. Analysis was requested on fifty-two of the seventy-one soil samples and all five of the surface samples (Table I.2).

One of the four surface sediment samples (BBDS1) was collected from sediment accumulation adjacent to the oil separator trench. The remaining three sediment samples (BBDS2-BBDS4) were collected, one from each of the three buildings surrounding the furnace area. All three buildings had contained drum reconditioning equipment. The floor in Building 1 contains 12 drainage canals, with an east-west orientation, along the east wall of the building. All canals were filled with cinder blocks and dry sediment, which appeared to have been swept into the canals. Sample BBDS2 was collected from the west end of the eighth canal (counting north to south). Sample BBDS3 was collected in Building 2 from within a small area enclosed by concrete curbing. Finally, sample BBDS4 was a composite collected from three small floor pits located in Building 3. Again, it appears that sediment accumulation in the building had been swept into these pits. It is from these sediments that the sample was collected.

ATTACHMENT B-6

The surface water sample (BBDW1) was collected at several locations, directly from the oil separator trench.

The list of parameters for which these samples were analyzed includes:

(1) Polychlorinated Biphenyls (PCB)
(2) Total Petroleum hydrocarbons (TPHC)
(3) Volatile Organic Compounds (VOC) plus 15 unidentified peaks
(4) Metals: As, Ba, Cd, Cr, Pb, Hg, Ag, Se
(5) 129 Priority Pollutants plus 40 unidentified peaks including:
    (a) VOC
    (b) Base Neutral and Acid Extractable Compounds (BN/AE)
    (c) Metals:
        (1) Antimony (Sb)
        (2) Arsenic (As)
        (3) Beryllium (Be)
        (4) Cadmium (Cd)
        (5) Chromium (Cr)
        (6) Copper (Cu)
        (7) Lead (Pb)
        (8) Mercury (Hg)
        (9) Nickel (Ni)
        (10) Silver (Ag)
        (11) Selenium (Se)
        (12) Thallium (Tl)
        (13) Zinc (Zn)
    (d) Phenol
    (e) Cyanide
(6) Dioxin

To verify that Dioxin is not present in soils, one sample, BBD17/0-1', collected in the furnace area, has been analyzed. This sample was chosen for Dioxin analysis because materials still remaining in the drums when received for processing, were removed in this area during the reconditioning process.

1.3 Field Investigation III - November 27 - December 17, 1985
During the third field investigation, four monitoring wells (BBDC1-4) and one monitoring well point (BBDC5) were installed at various locations on site (Figure 2). Wells BBDC1 and BBDC2 were installed as background locations. Well BBDC4 was so located to determine water quality conditions near the furnace residue pile, and well BBDC5 was so located to determine water quality conditions near the oil storage storage tanks. In addition, a deep well, BBDC3, was completed near the oil storage tanks area for the purpose of examining the quality of ground water at depth.

Additional split spoon soil samples were collected from well borings BBDC1-4, during the augering phase of well installation. A total of

ATTACHMENT B-7

twenty-one soil samples were collected, and analyses were requested on fourteen of the samples (Table I.3). Finally, after installation, the wells were developed using compressed air. Generally speaking, construction of the four monitoring wells is similar. After the initial boring was completed, four inch diameter PVC screen and casing was installed. The anulus was backfilled by pouring sandpack until it filled to a level approximately two feet above the screen. The anulus was then sealed with bentonite. A protective, locking, steel casing was set with cement in the portion of anulus still open. Construction of the deep well (BBDC3) required installation of an eight inch diameter steel casing down to a depth of thirteen feet. This was done to seal off an upper zone of contamination (discussed in more detail later). The well point (Well BBDC5) was constructed using 2½ inch diameter steel screen and casing. Well construction diagrams are presented in Appendix A.

1.4 Field Investigation IV - January 7, 1986

The last field investigation was completed on January 7, 1986. At that time, the four monitoring wells and one well point were redeveloped using a suction pump. A minimum of three well volumes was removed from each well, which was then sampled with a pre-cleaned teflon bailer. All samples were analyzed for VOC's, except for BBDC4, which was analyzed for priority pollutants (Table I.4).

52
14
14
80

ATTACHMENT 8-8

2.0 Site Description and Geologic Conditions

As stated in the DRAI Work Plan, the site covers approximately 20 acres of land located in an industrial area of Newark. The area is characterized by storage tank facilities, rail yards, trucking facilities and used car yards.

Ground surface of the site is approximately ten feet above sea level and slopes downward slightly to the northeast. It is underlain by Pleistocene drift, which fills a buried valley cut into the Brunswick Formation. The Passaic River runs a loop, north of the site, and eventually joins the Hackensack River where it opens into Newark Bay. The River is within a one mile radius of the site.

The property has an elongate shape that trends northeast-southwest (Figure 1). The northern edge of the property is bounded by the Pulaski Skyway, and the southern edge is bounded by the New Jersey Turnpike. The property consists of three main buildings, formerly used in the the drum reconditioning process, and several smaller buildings, used for offices. These facilities are located at the northeast end of the property. The central and southwest portions of the property are characterized, in general, by a black coal-cinder type fill. Approximately one-third of the southwest corner of the property is used for empty drum storage.

Boring log data, accumulated during DRAI field investigations, indicate a slight difference in the type and thickness of the lithologic sequence than was originally stated in the DRAI Work Plan. Lithologic data from borings around the site indicate that there is a black coal-cinder type fill found from surface down to an average depth of ten feet. The location of hydrogeologic cross-sections are displayed on Figure 3. The fill is underlain by a medium to a coarse grained, well sorted sand that ranges in color from brown to red-brown to dark maroon-brown. Observations of the lithology at depth were made while drilling well boring BBDC3 (Figures 4 and 5). As stated above, the fill is underlain by a medium to coarse sand that lies within a depth interval of ten to forty feet. The material observed from forty to fifty feet below surface consists of a dark red-brown, uniform, coarse silt. Below fifty feet, observations of cuttings indicated a gradational zone downward into more consolidated material. Once drilling proceeded beyond fifty feet, small fragments of dark red shale were observed. Drilling continued to a depth of fifty-three feet to confirm these observations. These findings are interpreted as a vertical gradation into the upper zone of weathered Brunswick Shale Formation. Boring logs are presented in Appendix B.

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3.0 Results of Analyses

Due to the volume of data, samples are not always discussed individually. Instead, the data is presented in tables using two formats. The data presented in the first format (Table II) has been categorized numerically by areas, as they are defined in Figure 6.

The concentration listed for a particular parameter (e.g., metals) represents a total of the individual constituents (e.g., Antimony, Arsenic, Barium, etc.) of that parameter. The data presented in Tables III through IX follow the second format. These data are listed chronologically and numerically. In addition, for those parameters having more than one constituent, each constituent and its concentration are listed. Chain of Custody Forms and laboratory data sheets are presented in Appendices C and D, respectively.
In summary, the list of parameters for which soil, surface sediment, surface water, and ground water samples were analyzed includes PCB's, TPHC's, VOC's, Priority Pollutants, Metals, EP-Toxicity, and Dioxin. These parameters were chosen to characterize the site and to establish base line conditions. The results of these analyses were also used to more thoroughly delineate suspected areas of environmental concern. Results, for analyses performed on samples, are discussed below.

3.1 Furnace Residue Pile Area

Forty-two soil samples were collected from the Furnace Residue Pile Area (Figure 2). Thirty-one of these forty-two samples were collected in the immediate vicinity of the furnace residue pile itself. The other eleven samples were collected from other locations within the area. One or more types of analyses, including PCB's, TPHC's, VOC's, a single priority pollutant scan and a single EP-Toxicity, were performed on thirty-four of the forty-two samples collected, and results were reported on all samples (Table II - Furnace Residue Pile Area). Eleven samples, consisting of nine split spoon soil samples (BBD1-9), one surface soil sample (BBD14) and one composite sample (BBD10), were collected during field investigation I. The nine soil samples and Sample BBD14 were analyzed for PCB's. Sample BBD10 is a composite sample which was produced on-site. An equal volume of material was taken from samples BBD2, 5 and 8, mixed on plastic, then containerized. This sample was analyzed for EP-Toxicity.

During Field Investigation II, an additional twenty-one split spoon soil samples were collected from five borings (BBD2, 4, 5, 6 and 7). Sixteen of these twenty-one samples were analyzed for parameters, including PCB's TPHC's, VOC's, and a single sample for priority pollutants. (Note: Some samples collected during Field Investigations I & II possess the same sample number; they are differentiated in the tables, by sampling date.)

The final ten of the forty-two samples are split spoon soil samples collected during field investigation III from well borings BBDC1 and 4, before installation of the wells. Seven of these samples were analyzed for PCB's, TPHC's and VOC's.

Of the eighteen samples analyzed for PCB's, laboratory results indicate that PCB's are present in six of them (Figure 7). Of the twenty-three soil samples analyzed for total petroleum hydrocarbons (TPHC's), TPHC's are present in twenty-two (Figure 8). A volatile organic compound analysis was run on six samples. Results show that four of the samples are contaminated (Figure 9). A priority pollutant scan performed on one sample (BBD4/0-1') revealed the presence of a variety of pollutants, including VOC's, metals, Phenol and Cyanide (Table 10).

3.2 Incoming Drum Storage Area

Eighteen split spoon soil samples were collected from four borings (BBD 9, 12, 13 & 15) during Field Investigation II. These borings are located in an area defined as the Incoming Drum Storage Area (Figure 6). Analyses were requested on fourteen of the eighteen samples. Analyses for PCB's, TPHC's, VOC's, and Metals were performed on thirteen samples. Results indicate that several of these contaminants are present in soils. A PCB analysis was performed on six samples. Four samples, one from each boring location, were found to be contaminated (Table II - Incoming Drum Storage Area). Three samples were analyzed for VOC's, and results show that all are contaminated. Finally, one sample (BBD15/0-1') was analyzed for metals and several constituents were detected.

3.3 Furnace Area

Fourteen samples, consisting of three surface soil, and eleven split spoon soil samples, were collected from the Furnace Area (Figure 2). One or more analyses were requested on thirteen of the fourteen samples collected, and results were reported for ten. Three surface soil samples (BBD 11, 12 and 15) collected during Field Investigation I were analyzed for PCB's. Eleven split spoon samples were collected from three borings (BBD 17, 18 and 19) during Field Investigation II. Results for seven of the eleven soil samples were reported for one or more contaminants including PCB's, TPHC's and VOC's. One sample (BBD17/0-1') was also analyzed for priority pollutants and Dioxin. Laboratory results indicate that PCB's were not present in the three surface soil samples (Table II - Furnace Area). PCB results were reported on the eight samples for which that analysis was requested and was detected in four of the samples. TPHC analysis, performed on seven soil samples, indicated that petroleum hydrocarbons are present in soils. Finally, a priority pollutant scan and an analysis for Dioxin were performed on one sample (BBD17/0-1'). Results indicate that VOC's, base neutral extractables (including Pesticide extractables) compounds, metals, Phenol and Cyanide compounds are also present in soils. Dioxin was not detected.

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3.4 Oil Storage Tank Area

Thirteen samples, consisting of one surface water sample, one surface sediment sample and eleven split spoon soil samples, were collected from the oil storage tank area (Figure 2). Analyses were requested and reported for nine of the samples. Two surface samples (BBDS1 and BBDW1) and two soil samples from Boring BBD16 were collected during Field Investigation II. The remaining seven soil samples, all taken during the augering of well boring BBDC3, were collected during Field Investigation III. Analyses requested for these samples include: PCB's, TPHC's, VOC's, and a Priority Pollutant scan.

Results for these samples indicate that many of the contaminants are present in soils (Table II - Oil Storage Tanks Area). Eight samples were analyzed for PCB's and nine were analyzed for TPHC's. Four samples contain PCB's, while all nine samples contain petroleum hydrocarbons. A volatile organic analysis was performed on five of the nine samples, three of which contained VOC's. Finally, a priority pollutant scan was requested on sample BBD16/5-8' and 8-10'. PCB's and VOC's, reported as part of the priority pollutant scan, have been discussed above. The remaining types of analyses, which complete the priority pollutant analysis, are metals, Phenol and Cyanide. Several metals and Phenol were detected in relatively minor concentrations. Cyanide was not detected.

3.5 Drum Storage and Background Areas

The Drum Storage and Background Areas consist of those sections, between the process buildings and the southern plant boundary, which have not yet been discussed. A total of twenty-one samples, all split spoon soil samples, were collected from seven borings. Nineteen of the twenty-one samples were collected from six borings (BBD1, 3, 8, 10, 11, and 14) during Field Investigation II. The remaining two samples were collected from well boring BBDC2 during Field Investigation III.

Analyses were requested on eighteen samples and reported for seventeen of them. Samples were analyzed for one or more parameters, including PCB's, TPHC's and VOC's (Table II - Drum Storage and Background Areas). A priority pollutant analysis was performed on one sample (BBD14/0-1'). Results indicate that VOC's are not present. However, a total concentration of 250 ppm was reported for metals and a total concentration of 830 ppm was reported for base neutral compounds. Acid extractable compounds, Phenols and Cyanide were not detected. Five samples were analyzed for PCB's. Four of the five samples contain PCB's at a detectable concentration. All twenty-one samples were analyzed for TPHC's. Results indicate that all samples contained a detectable concentration of petroleum hydrocarbons.

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3.6 Buildings

Three sediment samples (BBDS2-4) were collected, one each, from the three reconditioning buildings. Sample BBDS2 was analyzed for PCB's and VOC's, sample BBDS3 was analyzed for TPHC's and sample BBDS4 was analyzed for PCB's, TPHC's and VOC's. PCB's were detected in samples BBDS2 and BBDS4 at 80 and 11.1 ppm, respectively. Petroleum hydrocarbons were detected in samples BBDS3 and BBDS4 at 850 and 39,400 ppm, respectively, and concentrations of 84 parts per billion (ppb) was reported for sample BBDS4. Finally, volatile organics were detected in sample BBDS4 at 84 ppb.

3.7 Ground Water

A total of six samples, five ground water samples and one field blank, were analyzed (Table VIII). The field blank was made up of store-bought spring water. The types of analyses performed on the samples, with the exception of BBDC4, included PCB's, TPHC's and VOC's. Sample BBDC4 was analyzed for priority pollutants.

PCB's were detected, in a concentration of 53 ppb, in sample BBDC5. In addition, the laboratory filtered the sediment out of the sample and analyzed the sediment. A concentration of 80 ppm was reported. PCB's were not detected in any other samples. All of the ground water samples, except BBDC4, were analyzed for TPHC's. Concentrations found in samples BBDC1, 2, 3 and 6 are 2.8, 3.7, 4.8 and 1.8 ppm, respectively. The concentration in sample BBDC5, taken in the old storage tank area, was reported at 2,000 ppm. The remaining analyses were performed on sample BBDC4 as part of the priority pollutant scan. No metals were found in any significant concentrations. Although several metals were detected, all were, at, or just above, the threshold detection limit. A total concentration of 42 ppb was reported for base neutral compounds, and acid extractable compounds, Phenol and Cyanide, were not detected.

ATTACHMENT B-13

4.0 Areas of Environmental Concern

For the purpose of defining areas of environmental concern, the property has been geographically subdivided into six major areas, based on usage, land ownership, and future potential land utilization (Figure 6). These areas are:

I. Furnace Residue Pile Area
II. Incoming Drum Storage Area
III. Furnace Area
IV. Oil Storage Tank Area
V. Drum Storage and Background Area
VI. Drum Storage and Background Area (BBD3 & 8)
VII. Buildings

Activities performed in each area are discussed below in detail.

4.1 Furnace Residue Pile Area - Area I

The furnace residue pile area has been defined by two features. First, the waste residues generated during the drum cleaning process were disposed of on the furnace residue pile, which is located in this area (Figure 6); and, second, this portion of the property is owned by the principal of Bayonne Barrel & Drum Company. In addition, the remaining portion of this area is used for empty drum storage. Results of laboratory analyses indicate that a wide variety of contaminants, including PCB's, TPHC's, VOC's and metals, are present in significant concentrations in the furnace residue pile area.

4.2 Incoming Drum Storage Area - Area II

The incoming drum storage area is defined as the area which extends from the plant buildings to immediately south of the furnace area (Figure 6). This area was utilized as the first stage in reconditioning for the drums about to enter the furnace. Significant concentrations of each of four types of contaminants, PCB's, TPHC's, VOC's and metals, were found within this area.

4.3 Furnace Area - Area III

The furnace area is an enclosure created by the three main plant buildings (Figure 6). The furnace, itself, is situated here with a conveyor that passed from the incoming drum storage area, through the furnace, into a drum reconditioning building (Bldg. 2), where the process was completed. A recovery pit, rectangular in shape and perpendicular to the conveyor, was situated beneath the exit port of the furnace. Furnace residue type materials were observed on the ground, adjacent to the northwest side of the furnace. Analytical results revealed the presence of many contaminants. Constituents found included PCB's, TPHC's, VOC's, metals, base neutral compounds and Phenols.

4.4 Oil Storage Tank Area Area IV

The oil storage tank area is located east of the main plant buildings,

on the side closest to the New Jersey Turnpike (Figure 6). One tank (Figure 2) was used for storage of oil which had been liberated during the firing of incoming drums in the furnace area. Only one was observed by DRAI to be directly associated with the oil recovery system. Prior use of the remaining two tanks is unknown. There is also a trench which carried fluids, generated in the furnace area, to the oil separator area and a single underground tank located at the northern terminus of the trench. The exact volume of the tank is unknown. (Several inquiries, combined with information on file, have yielded several different answers.) However, using surface measurements, DRAI has estimated the volume to be 1,000 gallons.

Observations of the subsurface conditions, during the augering phase of borings BBD16, BBD3 & BBD5, revealed a zone of material, between three and nine feet, which appeared to be saturated with oil. Soils in this zone were very soft and fluid-like and offered little resistance when split spoons were actually driven.

The analytical results for samples collected in this area indicated that many contaminants are present in soils. PCB's and TPHC's were found at relatively high concentrations (Table II - Oil Storage Tanks Area). VOC's were detected, as were minor concentrations of metals and Phenol.

4.5 Drum Storage and Background Areas - Areas V & VI

The drum storage area encompasses those areas, between the furnace residue pile area and the main plant buildings, which have not been previously categorized (Figure 6). This area is actually divided into a northern and southern half. The division has been based on a knowledge of the prospects for land use in the future. Specifically, the Department of Transportation wishes to acquire the southern half of the property (Area V - south) to be used for transportation purposes.

These areas are characterized by a black, coal-cinder type of surface fill to a depth of approximately ten feet below surface (Figures 4 and 5). The areas are used primarily for storage of empty drums, and as lanes for vehicular traffic. Three types of pollutants, petroleum hydrocarbons, VOC's, and metals, were detected in soils within Area V. Petroleum hydrocarbons were found in all of the samples. Metals were detected in three samples, BBD8, 11 and 14. Volatile organics were detected in two of five samples analyzed for VOC's (both from well boring BBDC2).

4.6 Buildings

Three surface sediment samples (BBDS2, 3 and 4) were collected, one each, from the three main buildings surrounding the furnace area (Figure 6). Three types of analyses, PCB's, TPHC's and VOC's, were performed for the purpose of detecting contaminants in the interiors of the buildings. Results indicate that all three parameters are present in significant concentrations.

ATTACHMENT B-15

5.0 Summary of Findings

5.1 Soil and Sediment Quality

Soil samples, sediment samples, one surface water sample and five ground water samples were analyzed for a variety of parameters including PCB's, TPHC's, and VOC's. Four samples, each from a different area, were submitted for analysis of 129 Priority Pollutants plus 40 largest peaks (PP+40). A PP+40 scan includes VOC's, PCB's, Metals, Acid Extractables and Base/Neutrals Extractable Compounds, and four pesticides and two herbicides. One soil sample was submitted for analysis of Dioxin.

Analytical results for all parameters, except metals, are presented chronologically by area in Table II. This table was included to facilitate the review of results by area. Results of analyses for PCB's and total petroleum hydrocarbons (TPHC) are listed in Table III. Virtually all soil samples collected were analyzed for TPHC's. Only one sample was analyzed for Dioxin (Table III). Volatile organic compound (VOC) analyses results for both "priority" and non-priority" compounds are found on Table IV. Concentrations for inorganic parameters (metals, phenol, cyanide and pesticides) are presented in Table V. Concentrations for Base/Neutral - Pesticide extractable and acid extractable compounds are included on Table VI. Finally, results of analyses for PCB, TPHC, and VOC concentrations in surface sediment and water samples are presented on Table VII.

An unusual occurance appears to be present in the Oil Storage Tank area, which is unique to this location of the facility. During drilling operations an anomalously high water table was encountered. In addition, at the time of drilling, soils in this area possessed more fluid-like characteristics due to an abnormally high liquid content. This was observed in soils down to a depth of approximately 5 to 8 feet below surface. Concentrations for a variety of parameters reported for one ground water sample (BBDC5) and several soil samples collected in this area were consistantly higher than concentrations found in other areas. The furnace area is the only area which exhibits higher concentrations for several contaminants; specifically, concentrations of PCB's and VOC's are slightly higher. This is most likely a result of the fact that the furnace area is, in essence, the source area since the furnace area is the first location in which materials brought on site are liberated from drums. The liquid materials are then transferred to the Oil Storage Tank area for storage in above and below ground tanks, via a channel which connects both areas. The concentration for TPHC's is highest in the Oil Storage area. Although the initial source of these liquids may be the furnace area, the oils captured during drum firing are stored, in volume, in the Oil Storage Tank area thus creating a new primary source.

Polychlorinated Biphenyls. In general, results for PCB analyses indicate that this contaminant is distributed throughout the site. Concentrations reported, range from "not detected" at 1 part per million (ppm), to 320 ppm. The highest concentrations are found in the furnance and oil storage tank areas. Fluids, generated as a result of drum firing operations in the furnace area were pumped via a drainage channel into the storage tanks. Therefore, the relatively high concentration found in the storage tank area is substantiated by the fact that these materials have been readily transferred into the tanks area. PCB's were also detected in soils located in the incoming drum storage area, the furnace residue pile, and the drum storage and background areas.

A comparison of results obtained from duplicate analyses of samples performed by the laboratory, indicates a high degree of correlation in both compound identification and concentrations. The correlation between one sample (BBD17/1') a field duplicate of it (BBD17/S), collected in the furnace area, does indicate some disparity. However, in our opinion, this is a result of the method used to collect the duplicate. The two samples, the original and the duplicate, were collected by driving two separate split spoon samplers into the ground. The spoon sample locations were within a one to two foot distance of each other, but the soil samples can not be considered as typical duplicates since they were not from the same sample. Instead, each sample was collected separately, one from each spoon sample recovered.

Total Petroleum Hydrocarbons. With respect to total petroleum hydrocarbons, all soil samples collected during the field investigations of October and November 1985, and submitted to the laboratory, were analyzed for TPHC's. Concentrations found in samples collected from the surface to a depth of ten feet, all exceed the maximum permissible concentration allowed in soils. With the exception of one sample, BBDC1/10-12' (410 ppm), the concentration of TPHC's in all samples collected below a depth of ten feet were below the maximum permissible concentration for TPHC's in soil.

When reviewing these results, it should be noted that this property was used as a disposal area for coal and ash. These materials were an end product of a coal-burning, electric power generating station operating in the area. A review of Figures 4 and 5 reveals that the depth of this coal-ash fill is approximately ten feet and exists as the uppermost layer, from the surface down to a depth of ten feet.

For reasons as explained in the discussion of PCB's, TPHC results for sample BBD17/1' and its duplicate BBD17/S display some disparity; however, results for duplicate analyses performed by the laboratory exhibit a high degree of correlation.

ATTACHMENT 8-17

Volatile Organic Compounds. In general, volatile organic compounds in soils for priority and non-priority constituents were limited to specific areas only. VOC concentrations are significant in soils found in the incoming drum storage, furnace, oil storage tank and furnace residue pile areas, whereas results for soils analyzed outside the specified boundaries of these areas indicate that VOC's were not even present in detectable concentrations. Priority VOC's were detected in a range from "not detected" at 20 ppb to 22,553 ppb, and non-priority VOC's were detected in a range from "not detected" at 20 ppb to 66,035 ppb. The appearance of VOC's in soils is, in general, restricted to those areas in which materials handled and liberated in the process of reconditioning drums are most likely to be found. Thus, a noticeable distinction is present between contaminated and uncontaminated soils. Only one sample, (BBDC1/5-7'), collected outside any of the above named areas, contain significant concentrations of VOC's with reported values of 27.0 ppb and 2,160 ppb for priority and non-priority VOC's, respectively. VOC concentrations were found mostly within two depth intervals, 0-1' and 5-7', and where present in depths below seven feet, did not exceed the maximum permissible concentration allowed in soils.

One surface water and two surface sediment samples were analyzed for VOC's. VOC's were detected in one of the samples; however, concentrations do not exceed the maximum permissible concentration allowed in soils.

Inorganic Parameters. With respect to inorganic parameters, including metals, phenol and cyanide, some contaminants are present. Results for these parameters were generated as part of a PP+40 scan requested on four soil samples (BBD4/1', BBD14/1', BBD16/5-8 & 8-10' and BBD17/1'), one each from four different areas of the facility. Metals were found in a range of concentrations from "Not detected" for Thallium, to 15,500 ppm for Copper. The highest concentrations were found in the furnace and furnace residue pile areas. Metals showing the highest concentrations include Cadmium, Chromium, Copper, Lead and Zinc. Concentrations for these metals in the remaining two areas, in which the analyses were requested (Oil Storage Tank and Background), are substantially less. The remaining metals for which soils were analyzed were either not present, or present in relatively lower concentrations.

Phenol was detected in three of the four areas. Concentrations range between ND0.5 to 20 ppm. Phenol was detected in the furnace, furnace residue pile and oil storage tank areas. Phenol was not detected in a Background area.

Finally, Cyanide was reported in a range of concentrations from ND0.1 to 2 ppm in the furnace and furnace residue pile areas.

ATTACHMENT B-18

Base/Neutral and Acid Extractable Compounds. B/N, AE analysis was requested on four samples (as listed "Inorganic parameters). The soils are generally clean with respect to these compounds. Concentrations for base neutrals were reported in a range from ND9.5 to 850 ppm. Acid Extractable compounds were not detected.

5.2 Ground Water

Polychlorinated Biphenyls. A PCB analysis was requested for four of the five ground water samples including BBDC1, 2, 3 and 5. Contamination was detected in Well BBDC5 only, in the oil storage tank area, at a concentration of 53 ppb. Results of an analysis performed on sediments which were separated, from the water sample, by the laboratory, indicate that they also contain PCB's at a concentration of 80 ppm.

Total Petroleum Hydrocarbons. A TPHC analysis was requested on four (same as listed above) of the five ground water samples. The range of concentrations reported extends from 2.8 to 2,000 ppm. Concentrations for samples BBDC1, BBDC2, BBDC3 and BBDC5 were 2.8, 3.7, 4.8 and 2,000, respectively. A detectable concentration for TPHC's was reported (1.8) ppm) in the trip blank. As a result, the values reported for BBDC1-3, (2.8, 3.7 and 4.8 ppm) that are of the same magnitude, are questionable. However, since the results reported for sample BBDC5 are three times greater in magnitude, this is a positive indication that contamination is present in the sample.

Volatile Organic Compounds. VOC's were detected in all five ground water samples. However, there is a distinct difference between the total priority and non-priority concentrations reported for water sample BBDC5 when compared to the values reported for the remaining four ground water samples. For the priority VOC's, values were reported between "not detected" and 1,353 ppb. The range of values reported for non-priority VOC's falls between "none-detected" and 4,620 ppb. The total concentration reported in well BBDC5 for each set of parameters, priority and non-priority VOC's, exceeds the maximum allowable concentration for VOC's in ground water. For concentrations reported in the remaining four wells, BBDC1, 2, 3 and 4, the combined sum of priority and non-priority VOC's concentrations found in each does not exceed the maximum allowable concentration for VOC's in ground water.

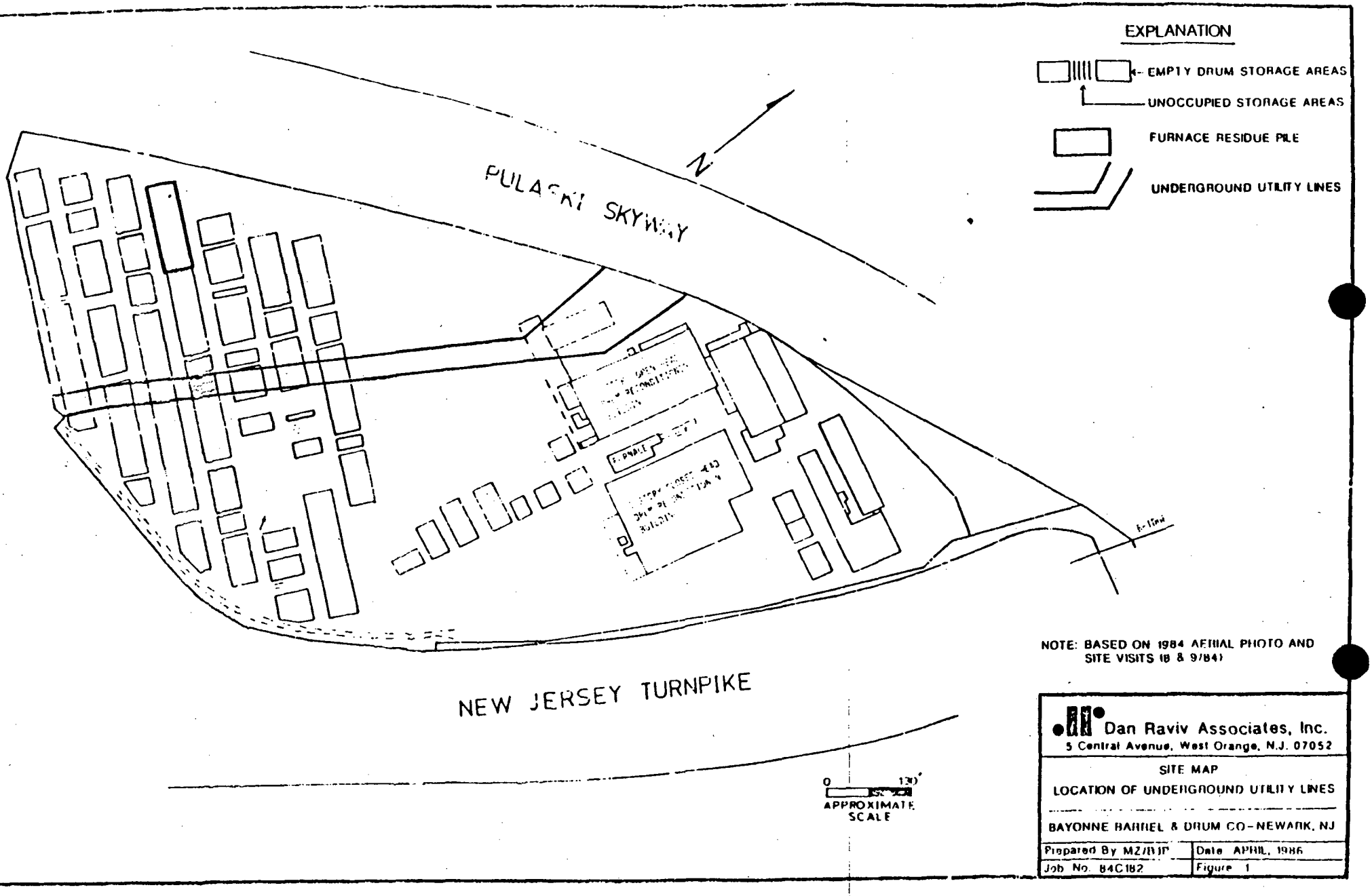
Inorganic Parameters. The inorganic parameters including metals, phenol and cyanide were requested as part of a PP+40 analysis requested on ground water sample BBDC4. With respect to these parameters, ground water was clean. Concentrations reported for all metals were reported as "not detected" or at or very close to the method detection limit, for each metal, in ground water. Both phenol and cyanide were "not detected".

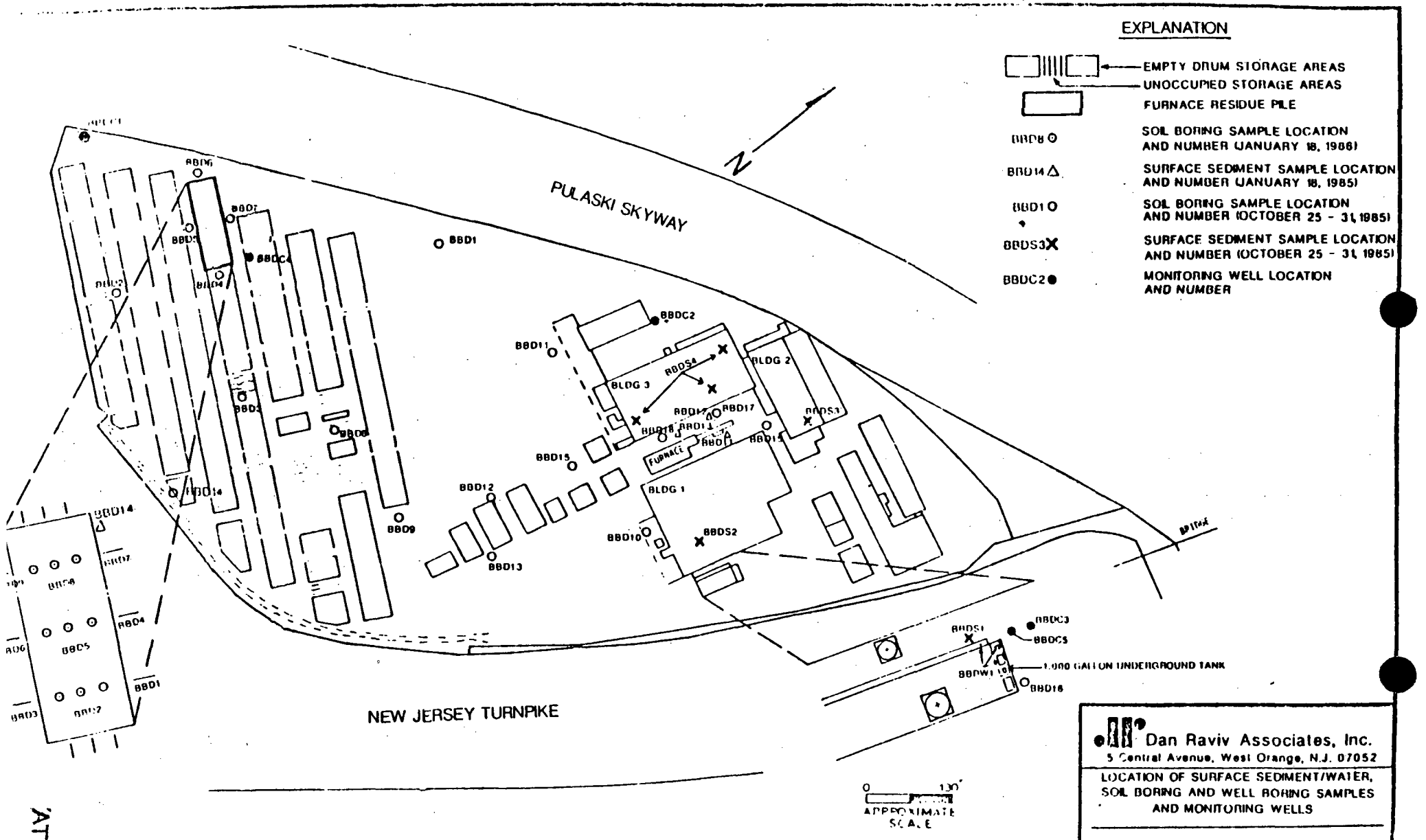
ATTACHMENT 8-19

Base/Neutral and Acid Extractable Compounds. B/N and AE compound analyses were also reported as part of the PP+40 scan requested on water sample BBDC4. The sum total concentration of B/N compounds reported is 42 ppb while AE compounds were "not detected".

Dioxin. One sample BBD17/1', taken from the furnace area, was submitted for analysis of Dioxin. A concentration of "not-detected" at a method detection limit of 0.320 ppb was reported.

ATTACHMENT B-20


EXPLANATION
EMPTY DRUM STORAGE AREAS
UNOCCUPIED STORAGE AREAS
FURNACE RESIDUE PILE
UNDERGROUND UTILITY LINES
N
PULASKI SKYWAY
NEW JERSEY TURNPIKE
NOTE: BASED ON 1984 AERIAL PHOTO AND SITE VISITS (8 & 9/84)
0
APPROXIMATE SCALE
Dan Raviv Associates, Inc.
5 Central Avenue, West Orange, N.J. 07052
SITE MAP
LOCATION OF UNDERGROUND UTILITY LINES
BAYONNE BARREL & DRUM CO-NEWARK, NJ
Prepared By MZ/BJP
Date APRIL, 1986
Job No. 84C182
Figure 1



NOTE: SURFACE WATER SAMPLE BBDW1 WAS TAKEN FROM OIL SEPARATOR TRENCH AND TANK VENTS (AS SHOWN)

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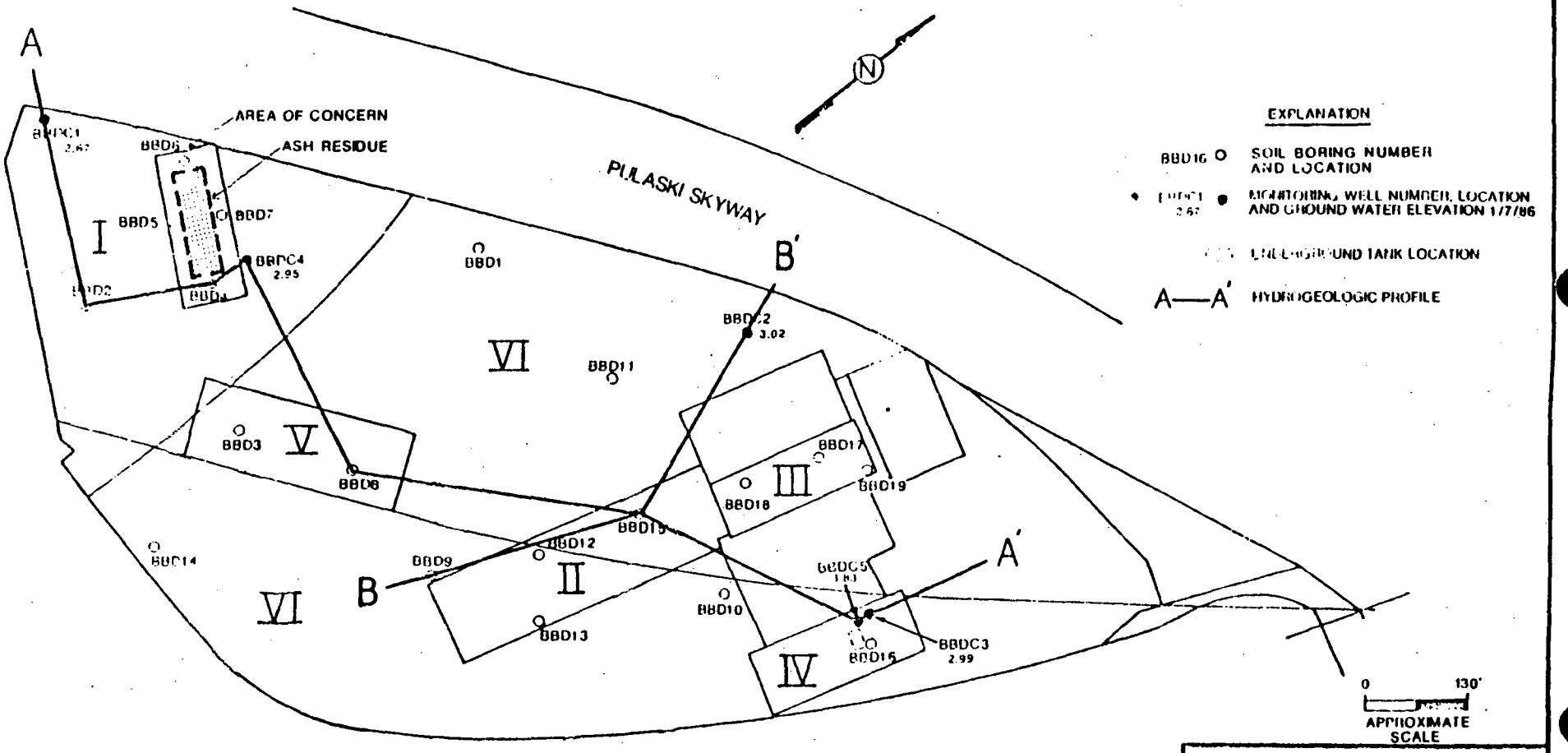
LOCATION OF SURFACE SEDIMENT/WATER, SOIL BORING AND WELL BORING SAMPLES AND MONITORING WELLS

BAYONNE BARREL & DRUM CO. NEWARK, NJ

Prepared By MZ/BJR	Date APRIL, 1986
Job No. 84C102	Figure 2

ATTACHMENT 8-22



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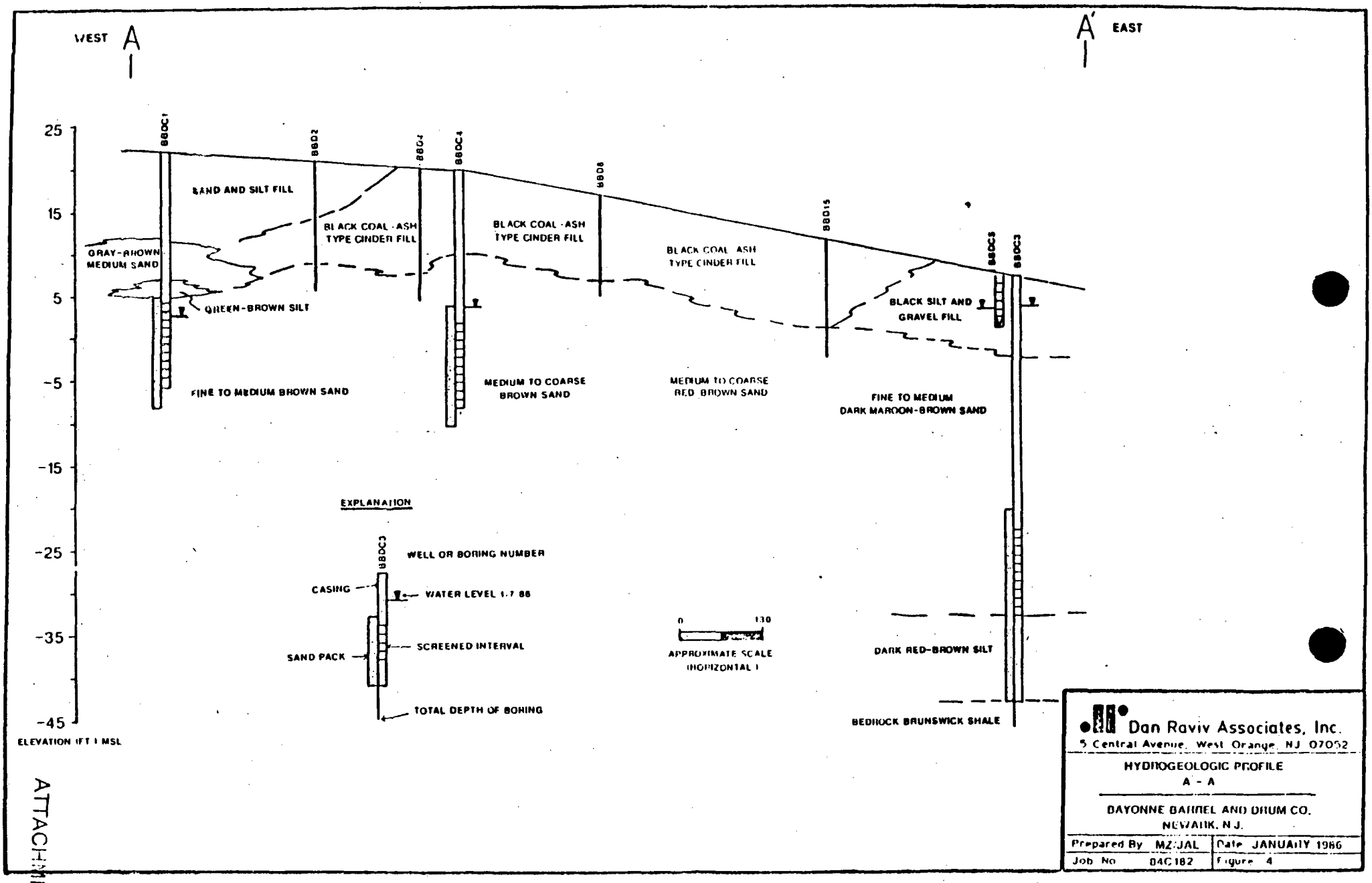
5 Spectra Avenue, West Orange, NJ 07052

LOCATION OF HYDROGEOLOGIC PROFILES

BAYONNE BARREL & DRUM CO - NEWARK, N.J.

MZ/JAL	Date MARCH,1986
840182	Figure 3

ATTACHMENT B-23



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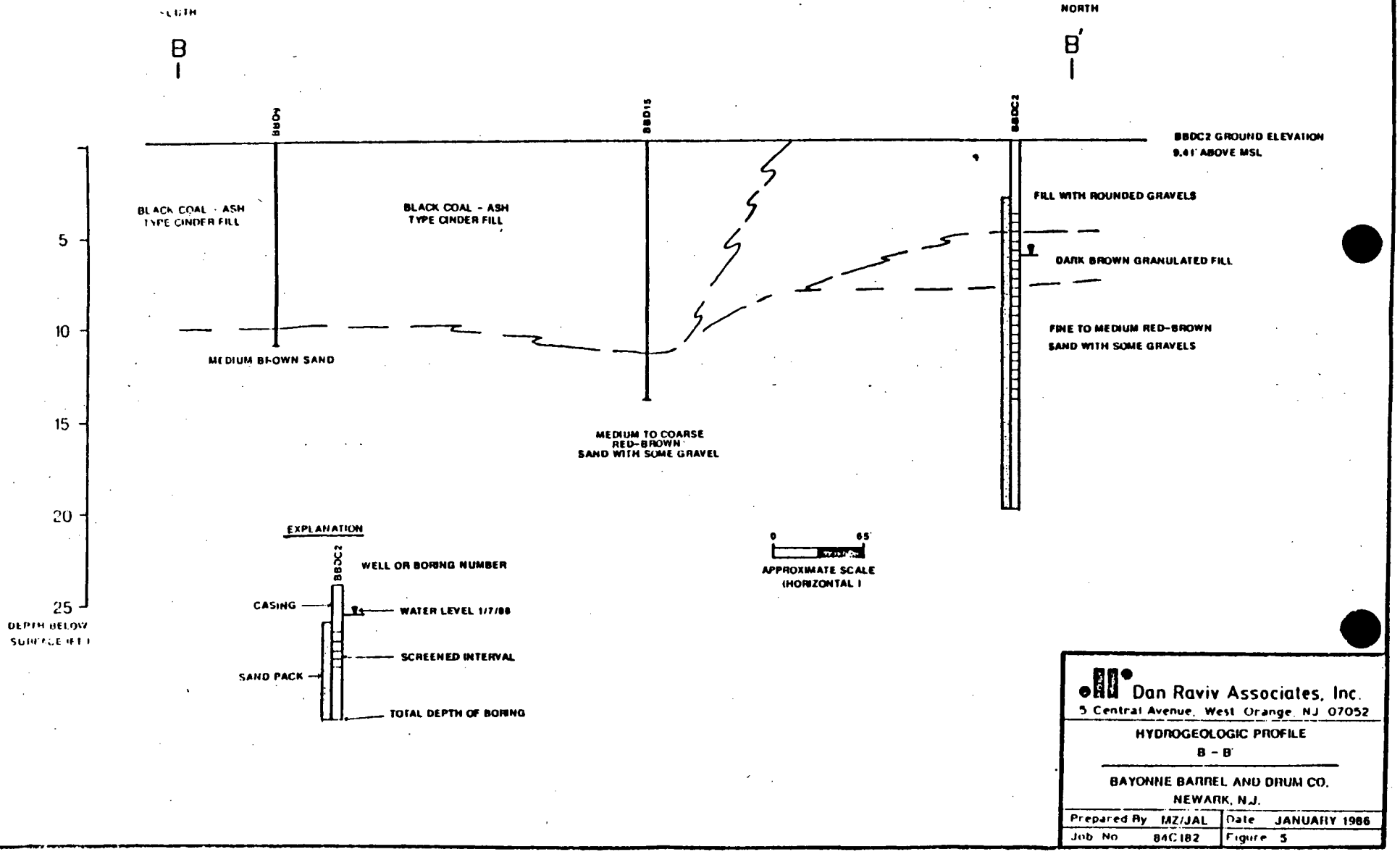
5 Central Avenue, West Orange, NJ 07052

HYDROGEOLOGIC PROFILE
A - A

BAYONNE BARREL AND DRUM CO.
NEWARK, N.J.

Prepared By MZ/JAL	Date JANUARY 1986
Job No 84C182	Figure 4

ATTACHMENT E-24



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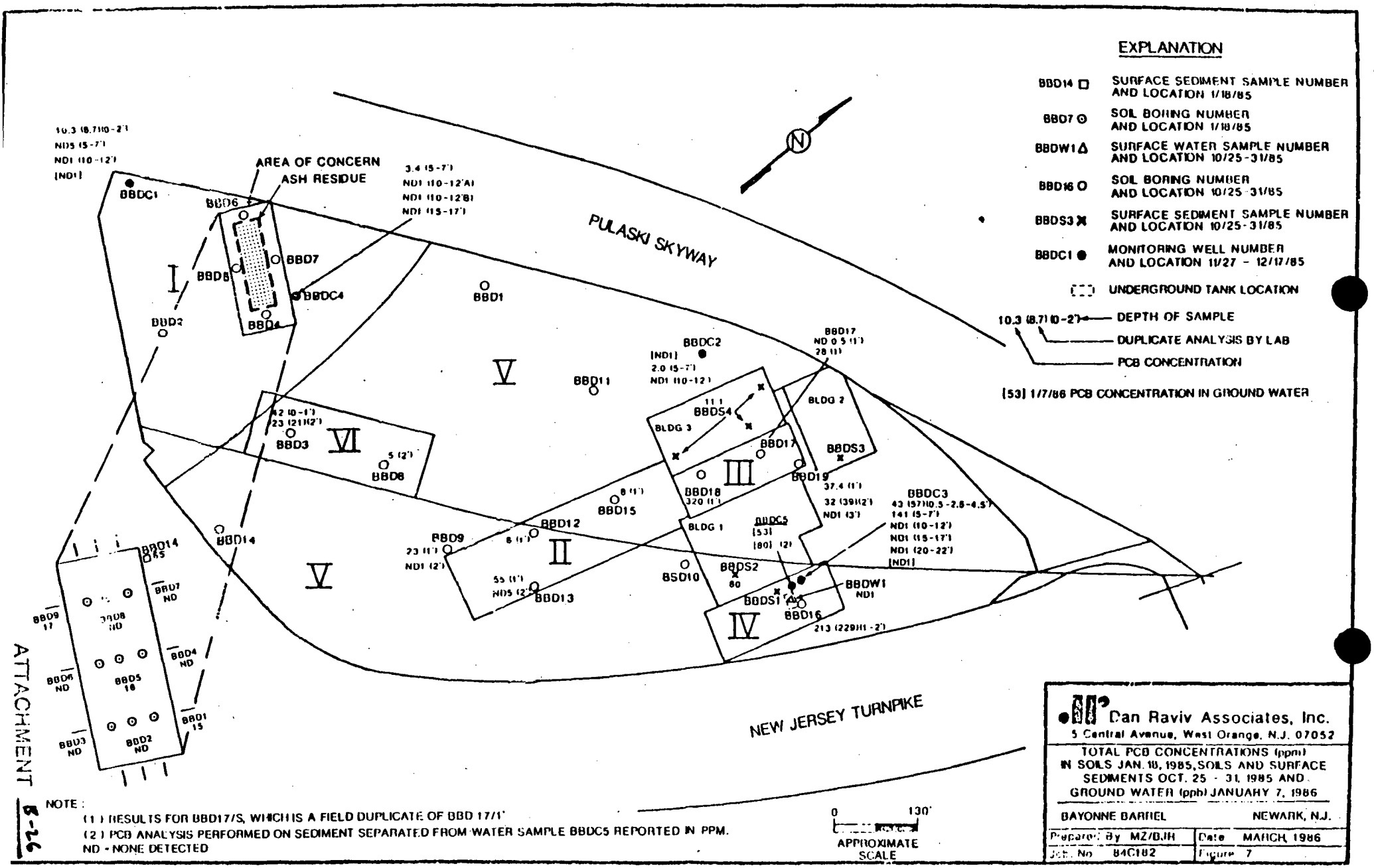
HYDROGEOLOGIC PROFILE
B - B'

BAYONNE BARREL AND DRUM CO.
NEWARK, N.J.

Prepared By MZ/JAL	Date JANUARY 1986
Job No 84C182	Figure 5

ATTACHMENT 8-25



NOTE:
(1) RESULTS FOR BBD17/S, WHICH IS A FIELD DUPLICATE OF BBD 17/1'
(2) PCB ANALYSIS PERFORMED ON SEDIMENT SEPARATED FROM WATER SAMPLE BBDC5 REPORTED IN PPM.
ND - NONE DETECTED

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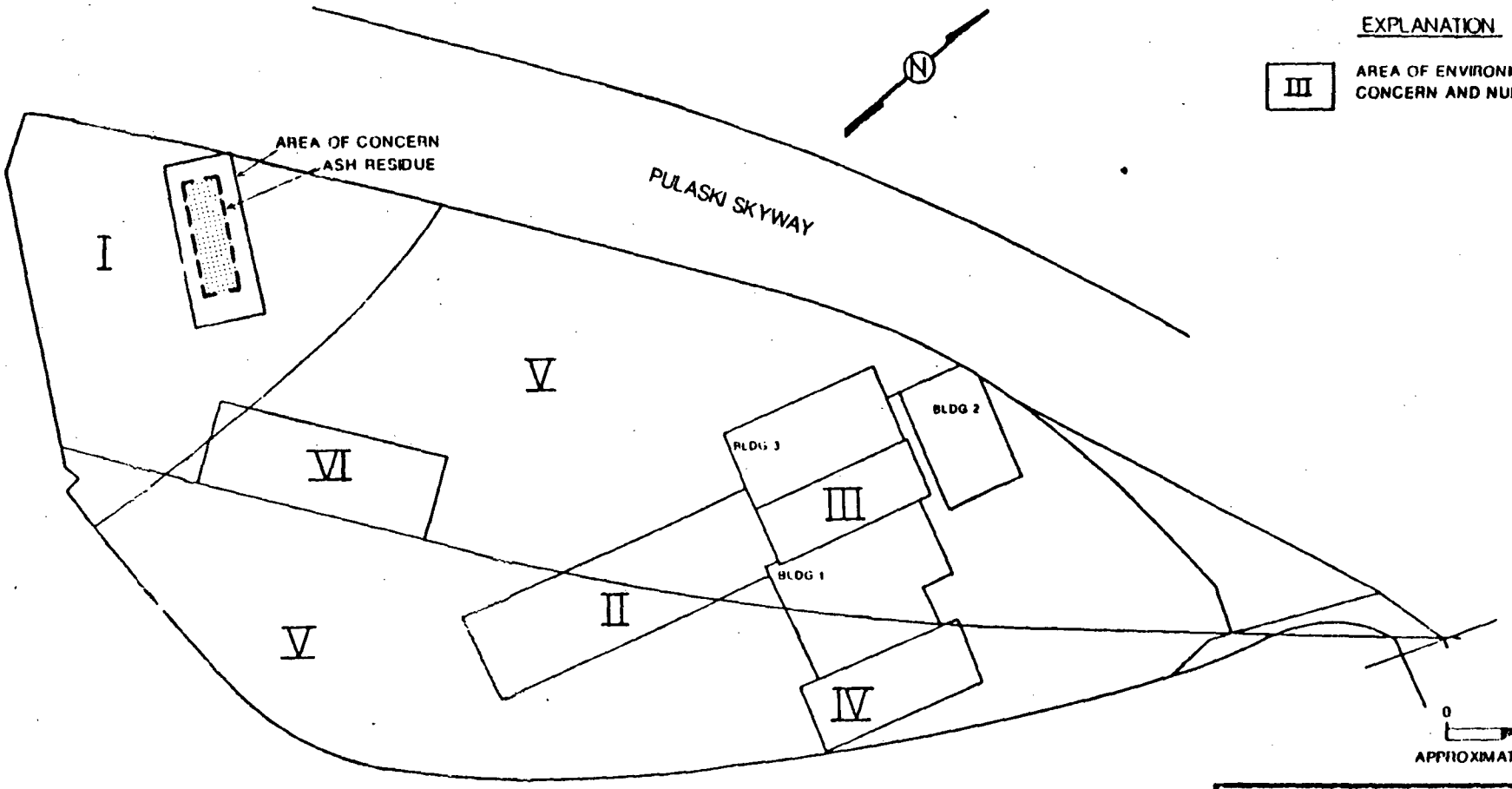
TOTAL PCB CONCENTRATIONS (ppm) IN SOILS JAN. 18, 1985, SOILS AND SURFACE SEDIMENTS OCT. 25 - 31, 1985 AND GROUND WATER (ppb) JANUARY 7, 1986

BAYONNE BARREL — NEWARK, N.J.

Prepared By MZ/BJH	Date MARCH, 1986
Job No 84C182	Figure 7

ATTACHMENT B-26



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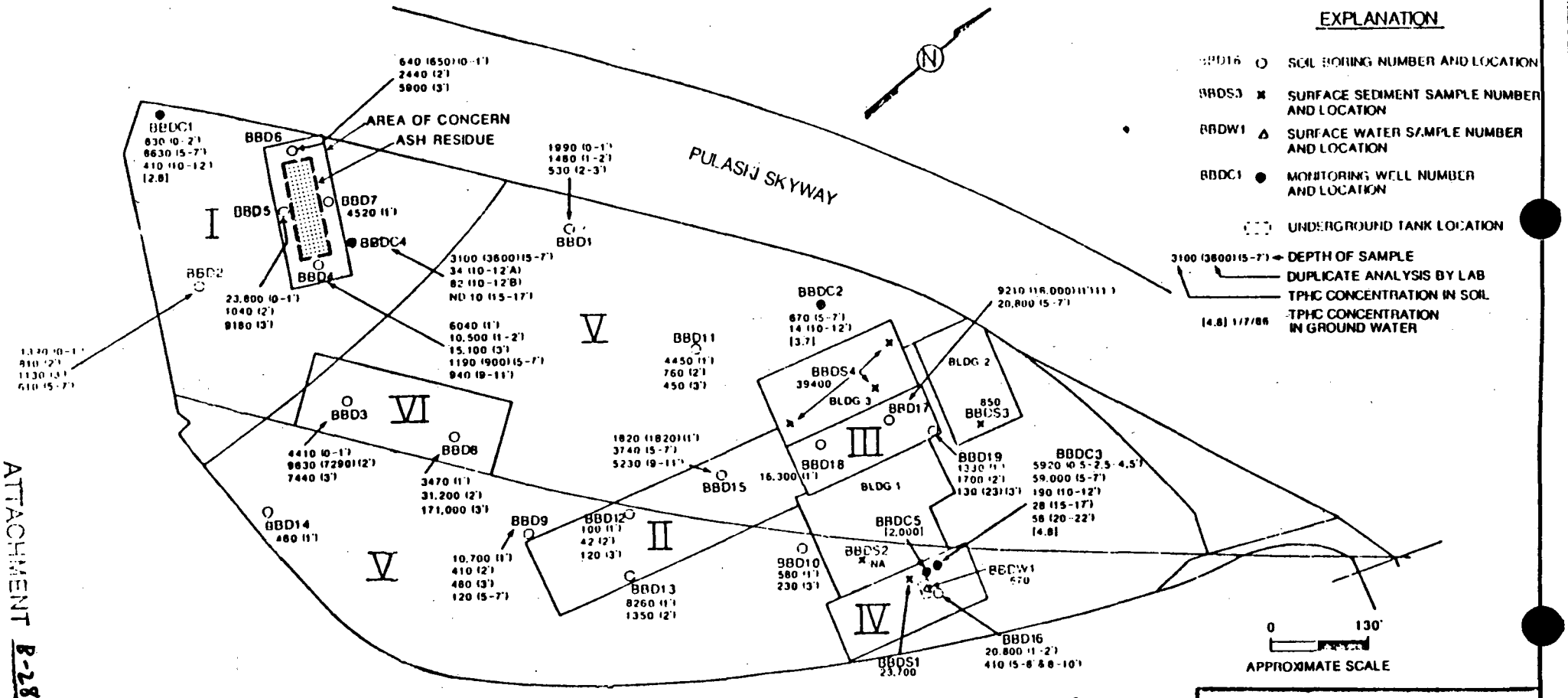
AREAS OF ENVIRONMENTAL CONCERN

BAYONNE BARREL & DRUM - NEWARK, NJ

Prepared By MZ/JAL	Date APRIL 1986
Job No 84C1112	Figure 6

ATTACHMENT 8-27



ATTACHMENT B-28

NOTE:
(1) RESULTS FOR BBD17/S, WHICH IS A FIELD DUPLICATE OF BBD17/1'.
NA NOT ANALYZED

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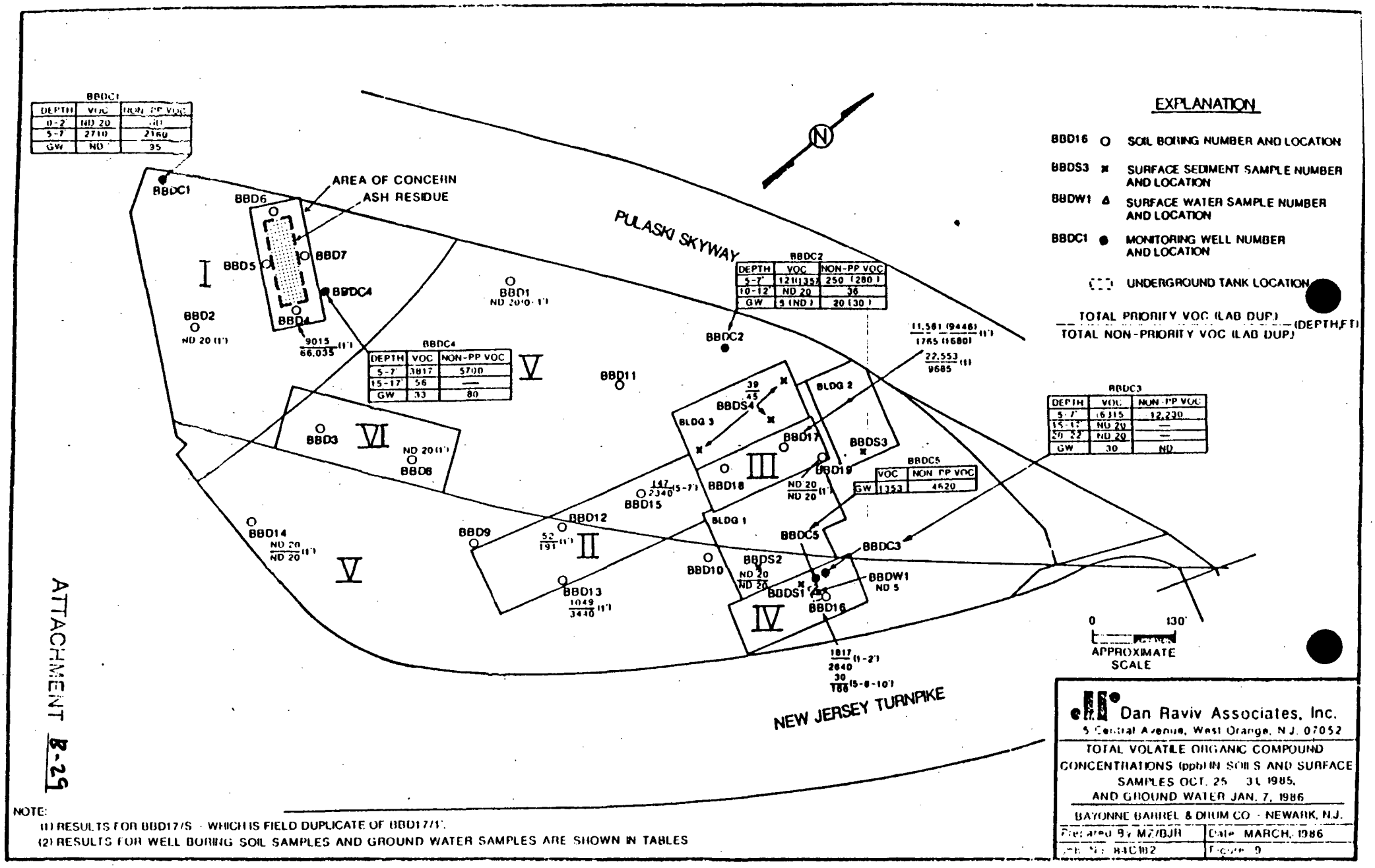
TOTAL PETROLEUM HYDROCARBON CONCENTRATIONS (ppm) IN SOILS AND SURFACE SAMPLES OCT. 25 - 31, 1985 AND GROUND WATER JAN. 7, 1986

BAYONNE BARREL & DRUM CO - NEWARK, N.J.

Prepared By MZ/BJR	Date MARCH, 1986
Job No. 84C182	Figure 8



ATTACHMENT B-29

NOTE:
(1) RESULTS FOR BBD17/S - WHICH IS FIELD DUPLICATE OF BBD17/1'.
(2) RESULTS FOR WELL BORING SOIL SAMPLES AND GROUND WATER SAMPLES ARE SHOWN IN TABLES

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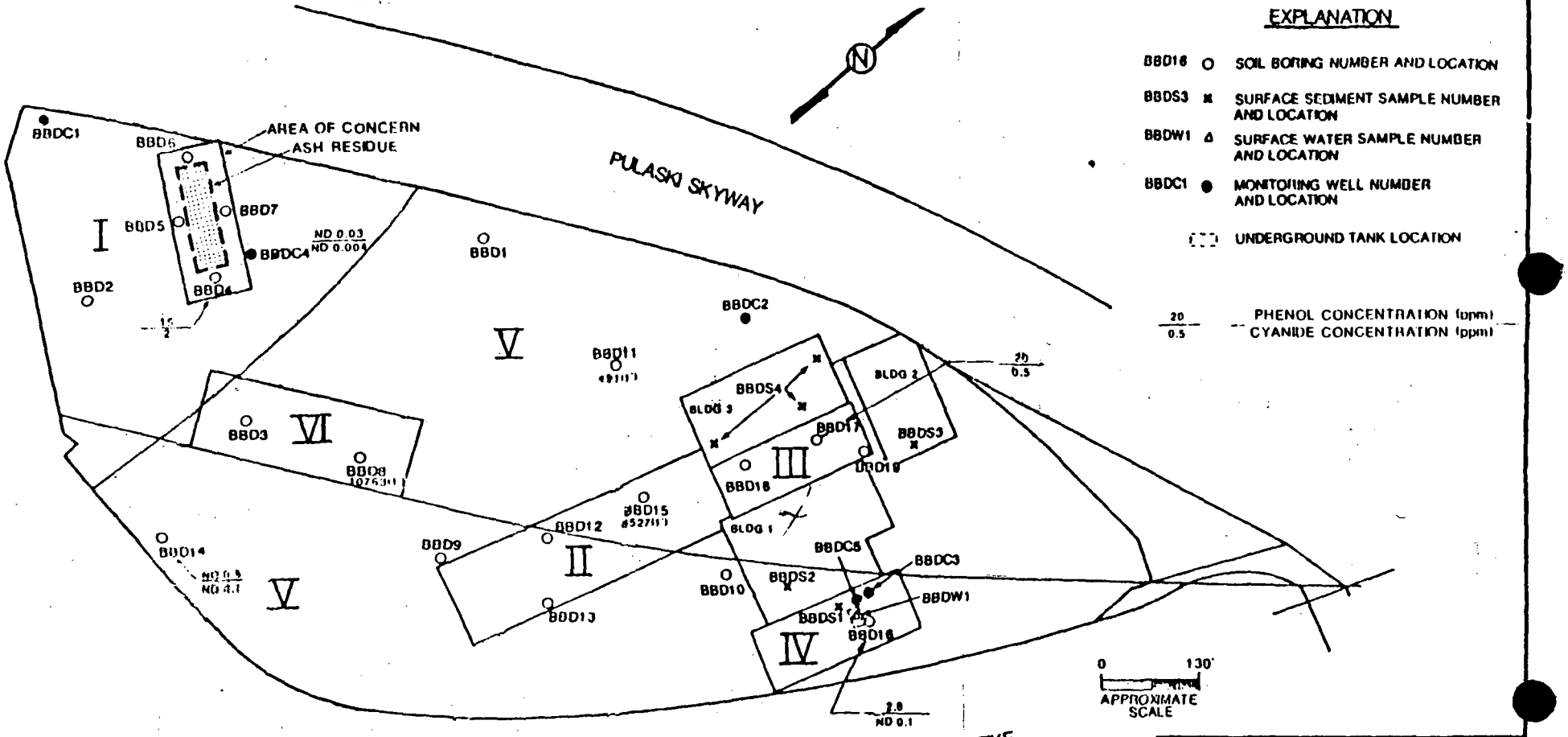
TOTAL VOLATILE ORGANIC COMPOUND CONCENTRATIONS (ppb) IN SOILS AND SURFACE SAMPLES OCT. 25 - 31, 1985, AND GROUND WATER JAN. 7, 1986

BAYONNE BARREL & DRUM CO. - NEWARK, N.J.

Prepared By MZ/BJR	Date MARCH, 1986
Job No. 84C102	Figure 9

GROUND WATER

METALS (PPM)	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
BBDC4	ND 0.5	0.01	ND 0.01	ND 0.01	ND 0.01	0.04	ND 0.1	ND 0.002	ND 0.01	ND 0.007	0.03	ND 0.1	0.03



EXPLANATION

- BBD16 ○ SOIL BORING NUMBER AND LOCATION
- BBDS3 ✖ SURFACE SEDIMENT SAMPLE NUMBER AND LOCATION
- BBDW1 Δ SURFACE WATER SAMPLE NUMBER AND LOCATION
- BBDC1 ● MONITORING WELL NUMBER AND LOCATION
- UNDERGROUND TANK LOCATION
- 20 / 0.5 — PHENOL CONCENTRATION (ppm) / CYANIDE CONCENTRATION (ppm)

ATTACHMENT B-30

SOILS

METAL (PPM)	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Hg	Ni	Ag	Se	Tl	Zn
BBD 4/5'	11	[illegible]	NR	0.64	1300	3400	15500	8400	2.2	62.4	0.92	0.030	ND 0.4	4520
BBD 14/1'	8.4	8.4	NR	0.28	0.62	27	15.6	92	1.6	25	0.3	0.019	ND 0.4	71.2
BBD 16/5-10'	4.0	2.9	NR	0.32	0.8	7.00	4.64	15	0.62	5.28	0.2	ND 0.004	ND 0.4	15.4
BBD 17/1'	6.0	[illegible]	NR	0.50	6.56	2300	128	370	1.6 (2.3)	56.8	1.7	0.023	ND 0.4	5040

NOTES:
FOR SAMPLES BBD 8, 11 & 15, METALS ANALYSIS INCLUDES: As,Ba,Cd,Cr,Pb,Hg,Ag and Se.
FOR SAMPLES BBD4, 14, 16 & 17, METALS ANALYSIS INCLUDES: Sb,As,Be,Cd,Cr,Cu,Pb,Hg,Ni,Se,Ag,Tl AND Zn.
(GW) RESULTS SHOWN FOR SAMPLE BBDC4 ARE CONCENTRATIONS IN GROUND WATER.

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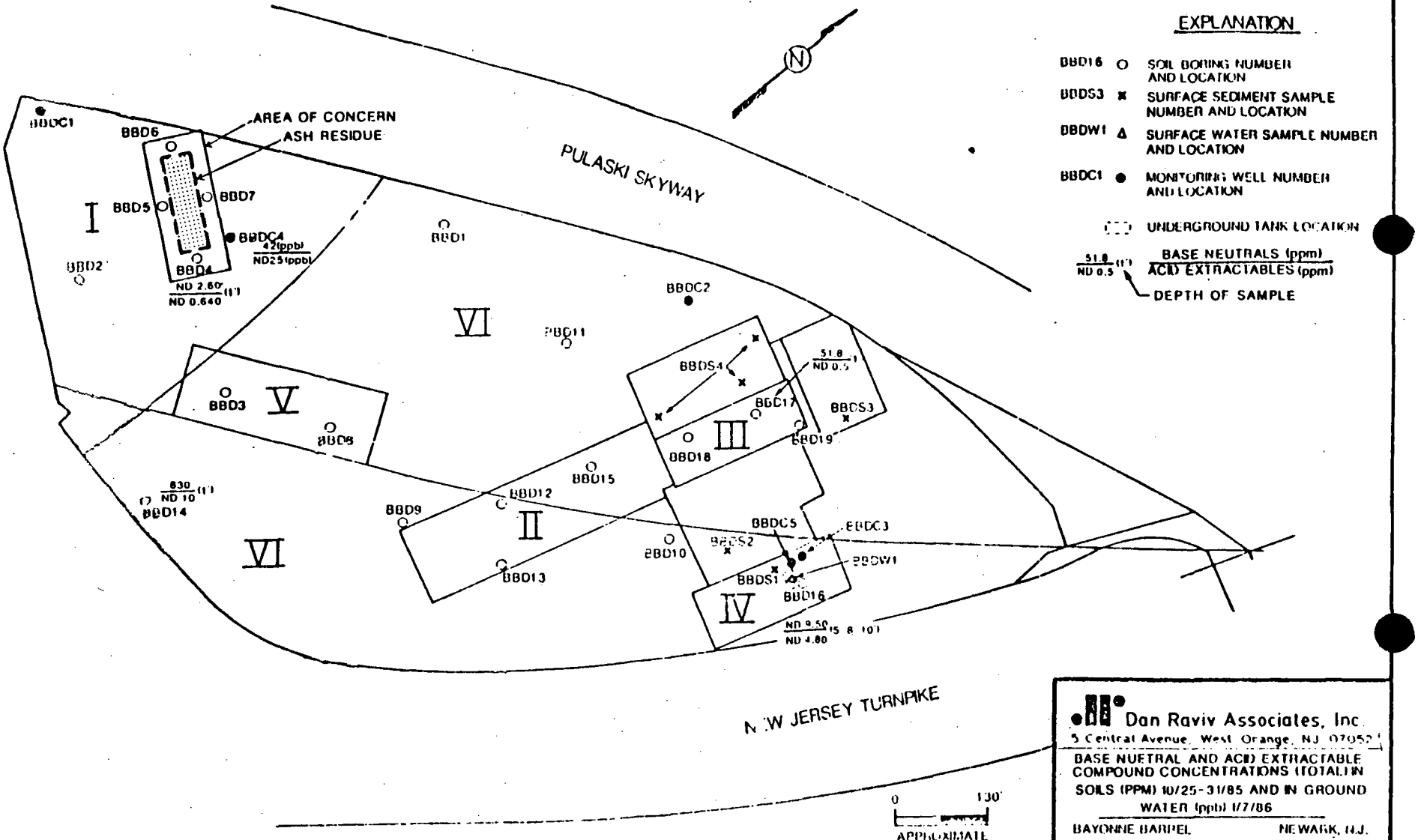
METALS, PHENOL AND CYANIDE CONCENTRATIONS (ppm) IN SOILS
OCTOBER 25 - 31, 1985
AND GROUND WATER JANUARY 7, 1986

BAYONNE BARREL & DRUM CO NEWARK, NJ

Prepared By MZ/JAL	Date APRIL, 1986
Job No. 84C182	Figure No. 10



NOTE: CONCENTRATIONS REPORTED FOR BBDC4 ARE FOR GROUND WATER.

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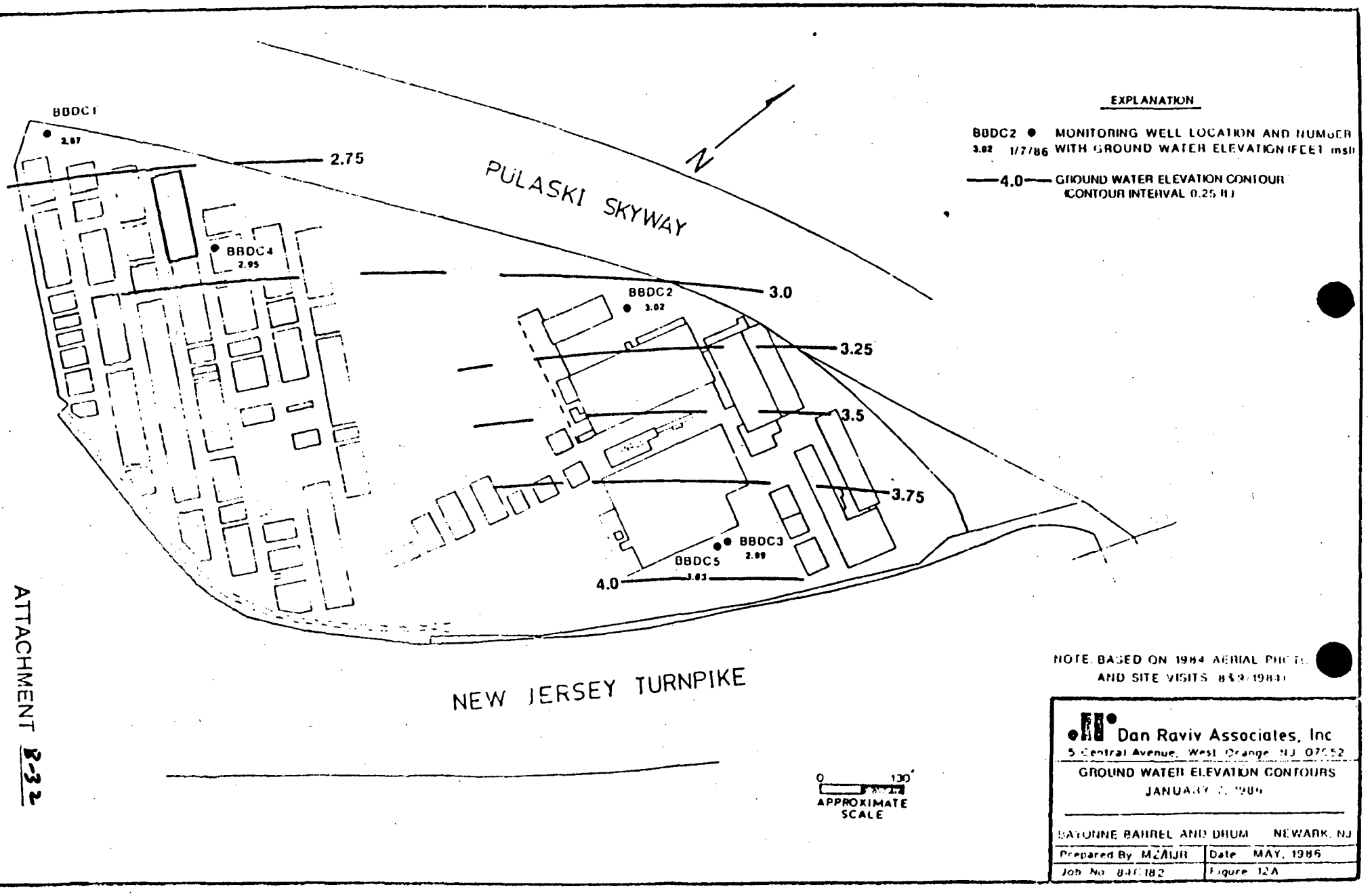
BASE NUETRAL AND ACID EXTRACTABLE COMPOUND CONCENTRATIONS (TOTAL) IN SOILS (PPM) 10/25-31/85 AND IN GROUND WATER (ppb) 1/7/86

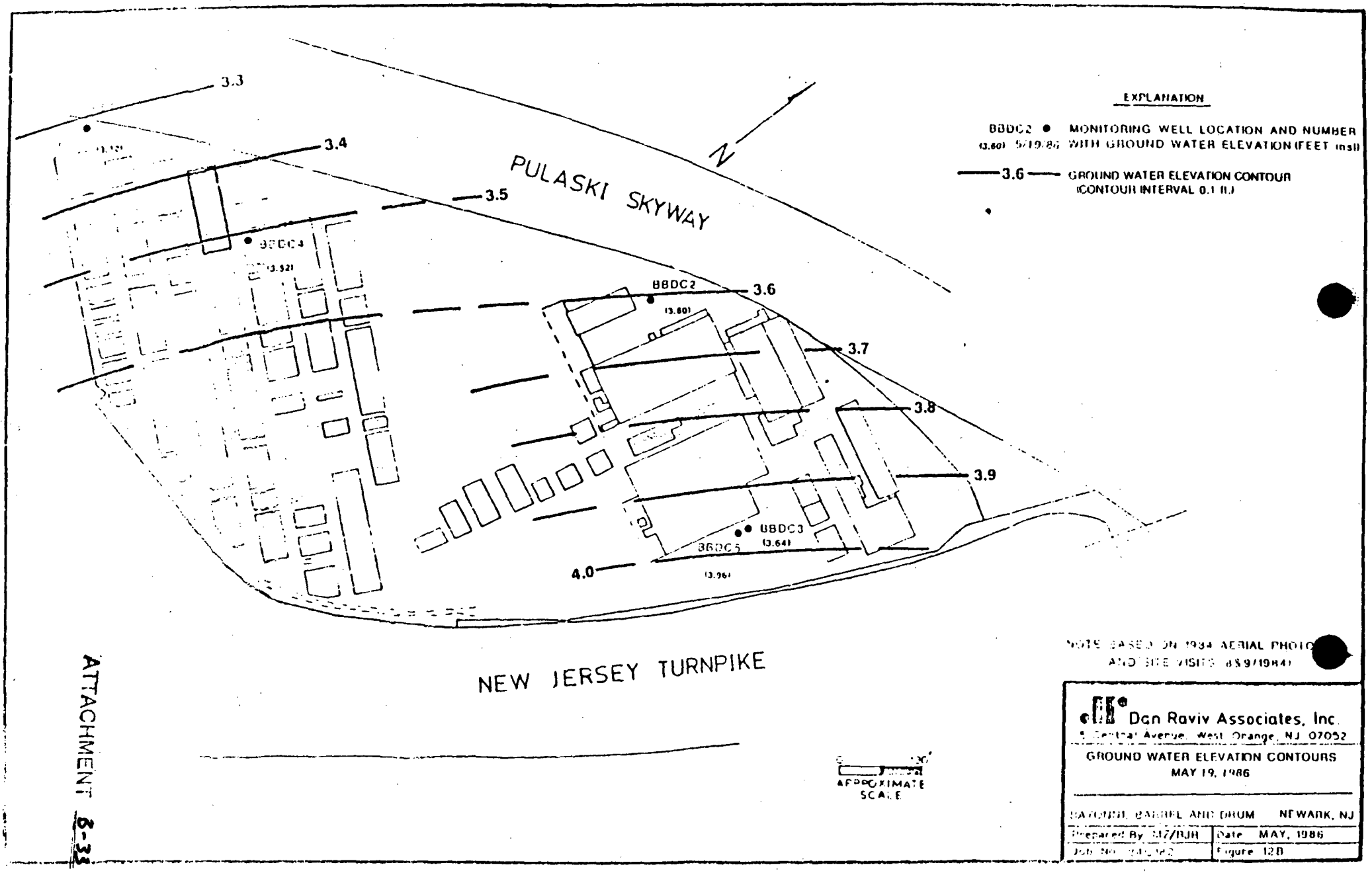
BAYONNE BARREL — NEWARK, N.J.

Prepared By MZ/BJR	Date MARCH 1986
Job No 84C182	Figure 11

ATTACHMENT B-31



ATTACHMENT B-32



ATTACHMENT 6-33

Table I.1

Summary of Soil Boring and Surface Samples and Analyses
Field Investigation I
January 18, 1985

Boring/Soil Sample No.	Sample Interval Deep (feet)	Analyses Requested
BBD1	0-2	PCB
BBD2	0-2	PCB
BBD3	0-3	PCB
BBD4	0-3	PCB
BBD5	0-3	PCB
BBD6	0-3	PCB
BBD7	0-3	PCB
BBD8	0-3	PCB
BBD9	0-3	PCB
BBD10	Composite (1)	EP-Toxicity
BBD11	Surface	PCB
BBD12	Surface	PCB
BBD13	Surface	PCB
BBD14	Surface	PCB

(1) Sample BBD10 is a composite of samples BBD 2,5 and 8. Analysis includes metals (As,Ba,Cd,Cr,Pb,Hg,Ag and Se), Herbicides (Endrine, Lindane, Methoxychlor, and Toxaphene) and Pesticides (2,4-D and 2,4,5-TP Silvex).

Table I.2

Summary of Soil Boring and Surface Samples and Analyses
Field Investigation II
October 25-31, 1985

Boring/Soil Sample No.	Sample Interval Depth (feet)	Analyses Requested
BBD1	0-1	TPHC, VOA
	1-2	[TPHC] (2)
	2-3	[TPHC]
	5-7	[TPHC]
BBD2	0-1	TPHC, VOA
	1-2	[TPHC]
	2-3	[TPHC]
	5-7	TPHC
	9-11	NR
	13-15	NR
BBD3	0-1	PCB, TPHC
	1-2	[PCB,TPHC]
	2-3	[TPHC]
BBD4	0-1	PP, TPHC
	1-2	TPHC
	2-3	[TPHC]
	5-7	[TPHC]
	9-11	[TPHC]
	13-15	NR
BBD5	0-1	TPHC
	1-2	[TPHC]
	2-3	[TPHC]
BBD6	0-1	TPHC
	1-2	[TPHC]
	2-3	[TPHC]
BBD7	0-1	TPHC
	1-2	NR
	2-3	NR
BBD8	0-1	TPHC, VOA, Metals
	1-2	[PCB, TPHC]
	2-3	[TPHC]
	5-7	TPHC
	7-9	NR
	9-11	NR

(1) NR = Analysis Not Requested.
(2) Request for analyses listed in brackets was made on 2/5/86.

Dan Raviv Associates, Inc.
Job No. 84C182

ATTACHMENT B-35

Summary of Soil Boring and Surface Samples and Analyses
Field Investigation II
October 25-31, 1985

Boring/Soil Sample No.	Sample Interval Depth (feet)	Analyses Requested
BBD9	0-1	PCB, TPHC
	1-2	[PCB, TPHC] (1)
	2-3	TPHC
	5-7	[TPHC]
	7-9	NR (2)
	9-11	NR
BBD10	0-1	TPHC
	1-2	(PCB,TPHC) (3)
	2-3	[TPHC]
BBD11	0-1	TPHC, Metals
	1-2	TPHC
	2-3	[TPHC]
BBD12	0-1	PCB,TPHC, VOA
	1-2	[TPHC]
	2-3	[TPHC]
BBD13	0-1	PCB, TPHC, VOA
	1-2	[PCB, TPHC]
	2-3	(TPHC)
	4(Field Blank)	VOA
BBD14	0-1	PP, TPHC
BBD15	0-1	PCB, TPHC, Metals
	1-2	NR
	2-3	(TPHC)
	5-7	TPHC, VOA
	9-11	[TPHC]
	12-14	NR
	15(Field Blank)	VOA
BBD16	1-2	VOA, [PCB, TPHC]
	5-8 & 8-10	PP, TPHC

(1) For parameters listed in brackets, request for analyses was made on 2/5/86.
(2) NR = Analysis not requested.
(3) For parameters listed in parenthesis, request for analyses was made 2/5/86; however, the sample was either lost or not analyzed due to insufficient volume.

Dan Raviv Associates, Inc.
Job No. 84C182

Table I.2 (cont'd)

Summary of Soil Boring and Surface Samples and Analyses
Field Investigation II
October 25-31, 1985

Boring/Soil Sample No.	Sample Interval Depth (feet)	Analyses Requested
BBD9	0-1	PCB, TPHC
	1-2	[PCB, TPHC] (1)
	2-3	TPHC
	5-7	[TPHC]
	7-9	NR (2)
	9-11	NR
BBD17	0-1	PP,TPHC, Dioxin
	S (1)	PCB, TPHC, VOA
	2-3	(PCB, TPHC) (2)
	5-7	[TPHC] (3)
	9-11	NR
BBD18	0-1	PCB,TPHC
	1-2	(PCB, TPHC)
	2-3	(PCB, TPHC)
BBD19	0-1	PCB,TPHC, VOA
	1-2	[PCB, TPHC]
	2-3	[PCB, TPHC]
BBD20	(Field Blank)	VOA
BBDW1	Surface Water	PCB, TPHC
BBDS1	Surface Sediment	PCB, TPHC
BBDS2	Surface Sediment	PCB, VOA
BBDS3	Surface Sediment	TPHC
BBDS4	Surface Sediment	PCB,TPHC, VOA

(1) BBD17/S is a field duplicate of BBD17/0-1'.
(2) For parameters listed in parentheses, request for analyses was made 2/5/86; however, the sample was either lost or not analyzed due to insufficient volume.
(3) For parameters listed in brackets, request for analysis was made 2/5/86.

Table I.3

Summary of Well Boring Samples and Analyses
Field Investigation III
November 27 - December 17, 1985

Boring/Soil Sample No.	Sample Interval Depth (feet)	Analyses Requested
BBDC1	0-2	PCB, TPHC, VOA
	5-7	VOA, [PCB,TPHC]
	10-12	PCB, TPHC
	15-17	NR
	20-22	NR
BBDC2	5-7	PCB, TPHC, VOA
	10-12	PCB, TPHC
BBDC3	0.5-2.5 & 2.5-4.5	[PCB,TPHC] (2)
	5-7	PCB, TPHC, VOA
	10-12	(PCB, TPHC)
	15-17	PCB, TPHC, VOA
	20-22	PCB, TPHC, VOA
	25-27	NR (1)
	30-32	NR
	35-37	NR
	40-42	NR
BBDC4	0-2	NR
	5-7	PCB, TPHC, VOA
	10-12A	PCB, TPHC
	10-12B	PCB, TPHC
	15-17	PCB, TPHC, VOA
BBDC5	No Sample	PCB

(1) NR = Analysis Not Requested.
(2) For parameters listed in brackets, request for analyses was made on 2/5/86.
(3) For parameters listed in parentheses, request for analyses was made on 2/5/86; however, the sample was either lost or not analyzed due to insufficient volume.

Table I.4

Summary of Ground Water Analyses
Field Investigation IV
January 7, 1986

Well Sample No.	Analysis Requested
BBDC1	PCB, TPHC, VOA
BBDC2	PCB, TPHC, VOA
BBDC3	PCB, TPHC, VOA
BBDC4	129 Priority Pollutants +40
BBDC5	PCB, TPHC, VOA
BBDC6 (1)	PCB, TPHC, VOA

(1) Sample BBDC6 is a field blank.

Table II
Summary of Sample Results by Area:
Concentrations of PCB's, TPHC's, VOC's, Base/Neutrals,
Acid Extractables, Phenol, Cyanide & Dioxin
Bayonne Barrel & Drum Company

PARAMETER: (units)		PCB's (ppm)	TPHC's (ppm)	VOC 's PRIORITY (Total) (ppb)	VOC's NON PRIORITY (ppb)	B/N (Total) (ppm)	AE (Total) (ppm)	PHENOL (ppm)	CYANIDE (ppm)
Sample Date	Sample No.	Sample Depth (ft)							
FURNACE RESIDUE PILE AREA									
January 18, 1985									
	BBD 1	0-2	15						
	BBD 2	0-2	ND 10						
	BBD 3	0-3	ND 10						
	BBD 4	0-2	ND 10						
	BBD 5	0-2	16						
	BBD 6	0-3	ND 10						
	BBD 7	0-2	ND 10						
	BBD 8	0-3	ND 15						
	BBD 9	0-3	17						
	BBD 10	C							
	BBD 14	surface	65						
October 25-31, 1985									
	BBD 2	0-1	1,390	ND 20	ND 20				
	BBD 2	1-2	810						
	BBD 2	2-3	1,130						
	BBD 2	5-7	610						
	BBD 4	0-1	6,040	9,015	66,035	ND 0.640	ND 2.60	15	2
	BBD 4	1-2	10,500						
	BBD 4	2-3	15,100						
	BBD 4	5-7	1,190 (900)						
	BBD 4	9-11	940						
	BBD 5	0-1	23,800						
	BBD 5	1-2	1,040						
	BBD 5	2-3	9,180						
	BBD 6	0-1	640 (650)						
	BBD 6	1-2	2,440						
	BBD 6	2-3	5,900						
	BBD 7	0-1	4,320						

Notes: ND = Not detected at or above minimum detection limit indicated.
C = Composite of samples BBD 2, BBD 5 & BBD 8.
Laboratory duplicates in parentheses.
If no entry, analysis was not requested.

ATTACHMENT B-40

Table II (cont.)
Summary of Sample Results by Area:
Concentrations for PCB's, TPHC's, VOC's, Base Neutrals,
Acid Extractables, Phenol, Cyanide & Dioxin
Bayonne Barrel & Drum Company

PARAMETER: (units)	Sample No.	Sample Depth (ft)	PCB's (ppm)	TPHC's (ppm)	VOC's PRIORITY (Total) (ppb)	VOC's NON PRIORITY (ppb)	B/N (Total) (ppm)	AE (Total) (ppm)	PHENOL (ppm)	CYANIDE (ppm)
OIL STORAGE TANKS AREA										
October 25-31, 1985										
	SBD 16	1-2	213 (229)	20800	1817	2640				
	SBD 16	5-8 & 8-10		410	30	166	ND 9.50	ND 4.80	2.8	ND 0.1
	SBDS 1	surface	130	23700						
	SBDV 1	surface	ND 1	670						
November 27 - December 17, 1985										
	SBDC 3	0.5-2.5 & 2.5-4.5	43 (57)	5920						
	SBDC 3	5-7	141	59000	6315	12230				
	SBDC 3	10-12	ND 1	190						
	SBDC 3	15-17	ND 1	28	ND 20	ND 20				
	SBDC 3	20-22	ND 1	58	ND 20	ND 20				
January 7, 1986										
	SBDC 3	Ground Water	ND 1 (ppb)	4.8						
	SBDC 5	Ground Water	53 (ppb)	2000						
			80 (1)							
DRUM STORAGE AND BACKGROUND AREAS										
October 25-31, 1985										
	SBD 1	0-1		1990	ND 20	ND 20				
	SBD 1	1-2		1480						
	SBD 1	2-3		530						
	SBD 3	0-1	42	4410						
	SBD 3	1-2	23 (21)	9630 (7290)						
	SBD 3	2-3		7440						
	SBD 8	0-1		2470	ND 20	ND 20				
	SBD 8	1-2	5	31200						
	SBD 8	2-3		173000						
	SBD 10	0-1		580						
	SBD 10	2-3		230						
	SBD 11	0-1		4450						
	SBD 11	1-2		760						
	SBD 11	2-3		450						
	SBD 14	0-1		460	ND 20	ND 20	830	ND 10	ND 0.5	ND 0.1
November 27 - December 17, 1985										
	SBDC 2	5-7	2	670	121 (135)	250 (280)				
	SBDC 2	10-12	ND 1	14	ND 20	36				
BUILDINGS										
October 25-31, 1985										
	SBDS 2	surface	80		ND 20	ND 20				
	SBDS 3	surface		850						
	SBDS 4	surface	11.1	39400	39	45				

Notes: (1) Concentration (ppm) in sediments filtered out of sample.
ND = Not detected at or above minimum detection limit indicated.
Laboratory duplicates in parentheses.

Table 11 (cont.)

Summary of Sample Results by Area:
Concentrations for PCB's, TPHC's, VOC's, Base/Neutrals,
Acid Extractables, Phenol, Cyanide & Dioxin
Bayonne Barrel & Drum Company

Sample Date	Sample No.	Sample Depth (ft)	PCB's (ppm)	TPHC's (ppm)	VOC's PRIORITY (Total) (ppb)	VOC's NON PRIORITY (ppb)	B/N (Total) (ppm)	AE (Total) (ppm)	PHENOL (ppm)	CYANIDE (ppm)	DIOXIN (ppb)
FURNACE RESIDUE PILE AREA (cont.)											
November 27 - December 17, 1985											
	BBDC 1	0-2	10.3 (8.7)	830	ND 20	ND 20					
	BBDC 1	5-7	ND 5	8,630	2,710	2,160					
	BBDC 1	10-12	ND 1	410							
	BBDC 4	5-7	3.4	3,100 (3,600)	3,817	5,700					
	BBDC 4	10-12A	ND 1	34							
	BBDC 4	10-12B	ND 1	82							
	BBDC 4	15-17	ND 1	ND 10	56	ND 20					
January 7, 1986											
	BBDC 4	Ground Water	ND 10 (1)		33	80	42 ppb	ND 25 ppb	ND 0.03	ND 0.004	
FURNACE AREA											
January 10, 1985											
	BBD 11	surface	ND 10								
	BBD 12	surface	ND 20								
	BBD 13	surface	ND 10								
October 25-31, 1985											
	BBD 17	0-1	ND 0.5 (1)	9,210	11,561 (9,446)	1,765 (1,680)	51.8	ND 0.5	20	0.5	ND 0.32
	BBD 17	8	28	16,000	22,533						
	BBD 17	5-7		20,800							
	BBD 18	0-1	320	16,300							
	BBD 19	0-1	37.4	4,330	ND 20	ND 20					
	BBD 19	1-2	32 (39)	1,700							
	BBD 19	2-3	ND 1.0	130 (23)							
INCOMING DRUM STORAGE AREA											
October 25-31, 1985											
	BBD 9	0-1	23	10,700							
	BBD 9	1-2	ND 1	410							
	BBD 9	2-3		480							
	BBD 9	5-7		120							
	BBD 12	0-1	6	100	52	191	9.13	ND 0.5			
	BBD 12	1-2		42							
	BBD 12	2-3		120							
	BBD 13	0-1	55	8,260	1,049	3,440	27.01	ND 0.5			
	BBD 13	1-2	ND 5	1,350							
	BBD 15	0-1	8	1,820 (1,820)			31.24	ND 0.5			
	BBD 15	5-7		3,740	147	2,340					
	BBD 15	9-11		5,230							

Notes: (1) PCB results are part of the priority pollutent-base neutral scan for the sample listed.
Sample BBD17/8 is a field duplicate of sample BBD17/0-1.
ND = Not detected at or above minimum detection limit indicated.
Laboratory duplicates in parentheses.
If no entry, analysis was not requested.

ATTACHMENT 8-42

Table III
Summary of Polychlorinated Biphenyls, Total Petroleum Hydrocarbon & Dioxin
Concentrations in Soils January 18, October 25-31, 1985 and November 27 - December 17, 1985
Bayonne Barrel & Drum Company

PARAMETER (units):	PCB's (ppm)	PCB's (ppm)	Total Petroleum Hydrocarbons (ppm)
Sample date:	1/18/85	10/25-31/85	10/25-31/85
Sample No./ Sample Depth (ft)			
BBD 1/0-1	15		1990
BBD 1/1-2			1480
BBD 1/2-3			530
BBD 2/0-1	ND 10		1390
BBD 2/1-2			810
BBD 2/2-3			1130
BBD 2/5-7			610
BBD 3/0-1	ND 10	42	4410
BBD 3/1-2		23 (21)	9630 (7290)
BBD 3/2-3			7440
BBD 4/0-1	ND 10		6040
BBD 4/1-2			10500
BBD 4/2-3			15100
BBD 4/5-7			1190 (900)
BBD 4/9-11			940
BBD 5/0-1	16		23800
BBD 5/1-2			1040
BBD 5/2-3			9180
BBD 6/0-1	ND 10		640 (650)
BBD 6/1-2			2440
BBD 6/2-3			5900
BBD 7/0-1	ND 10		4520
BBD 8/0-1	ND 15		3470
BBD 8/1-2		5	31200
BBD 8/2-3			173000
BBD 9/0-1	17	23	10700
BBD 9/1-2		ND 1	410
BBD 9/2-3			480
BBD 9/5-7			120
BBD 10/0-1			580
BBD 10/2-3			230

Notes: Samples BBD 1 - BBD 9, collected January 18, 1985, are split spoon samples taken from a depth of 0-2 feet.
ND = Not detected at or above minimum detection limit indicated.
Laboratory duplicates in parentheses.
If no entry, analysis was not requested.

ATTACHMENT B-43

Summary of Polychlorinated Biphenyls, Total Petroleum Hydrocarbon & Dioxin Concentrations in Soils January 18, October 25-31, 1985 and November 27 - December 17, 1985
Bayonne Barrel & Drum Company

PARAMETER (units):	PCB's (ppm)	PCB's (ppm) 10/25-31/85	Total Petroleum Hydrocarbons (ppm)	Dioxin (ppb)
Sample date:	1/18/85	11/27 - 12/17/85	10/25-31/85	10/25-31/85
Sample Designation/ Sample Depth (ft.)				
BBD 11/0-1	ND 10 (1)		4450	
BBD 11/1-2			760	
BBD 11/2-3			450	
BBD 12/0-1	ND 20 (1)	6	100	
BBD 12/1-2			42	
BBD 12/2-3			120	
BBD 13/0-1	ND 10 (1)	55	8260	
BBD 13/1-2		ND 5	1350	
BBD 14/0-1	65 (1)		460	
BBD 15/0-1		8	1820 (1820)	
BBD 15/5-7			3740	
BBD 15/9-11			5230	
BBD 16/1-2		213 (229)	20800	
BBD 16/5-8,8-10			410	
BBD 17/0-1		ND 0.5	9210	ND 0.320
BBD 17/S		28	16000	
BBD 17/5-7		--	20800	
BBD 18/0-1		320	16300	
BBD 19/0-1		37.4	4330	
BBD 19/1-2		32(39)	1700	
BBD 19/2-3		ND 1	130 (23)	
BBD C1/0-2		10.3(8.7)	830	
BBD C1/5-7		ND 5	8630	
BBD C1/10-12		ND 1	410	
BBD C2/5-7		2	670	
BBD C2/10-12		ND 1	14	
BBD C3/0.5-2.5, 2.5-4.5		43(57)	5920	
BBD C3/5-7		141	59000	
BBD C3/10-12		ND 1	190	
BBD C3/15-17		ND 1	28	
BBD C3/20-22		ND 1	58	
BBD C4/5-7		3.4	3100 (3600)	
BBD C4/10-12A		ND 1	34	
BBD C4/10-12B		ND 1	82	
BBD C4/15-17		ND 1	ND 10	

ATTACHMENT 8-44

Notes: (1) Samples BBD 11 - BBD 14, collected January 18, 1985, are surface soil samples.
Results for samples designated "BBD C" are for samples collected on 11/27 - 12/17/85.
ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

Table IV
Summary of Volatile Organic Compound
Concentrations in Soils
October 25-31, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD 1	BBD 2	BBD 4	BBD 8	BBD 12	BBD 13	BBD 13	BBD 14
Sample Depth (ft):	0-1	0-1	0-1	0-1	0-1	0-1	4 (field blank)	0-1
PRIORITY POLLUTANTS (ppb)								
Acrolein (ppm)			ND 1					ND 1
Acrylonitrile (ppm)			ND 1					ND 1
Vinyl Chloride	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 5	ND 20
Chloroethane								
Methylene Chloride								
1,1-Dichloroethylene								
1,1-Dichloroethane								
1,2-Dichloroethylene								
Chloroform								
1,2-Dichloroethane								
1,1,1-Trichloroethane								
1,2-Dichloropropane								
Trichloroethylene			ND 20			ND 20		
Benzene			55			29		
1,1,2-Trichloroethane			ND 20			ND 20		
1,1,2,2-Tetrachloroethylene			ND 20			ND 20		
Toluene			360			210		
Chlorobenzene			ND 20		ND 20	ND 20		
Ethylbenzene			8600		52	810		
1,2 & 1,4-Dichlorobenzene	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 5	ND 20
Total Priority Pollutants	ND 20	ND 20	9015	ND 20	52	1049	ND 5	ND 20

Notes: ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

ATTACHMENT 8-45

Table IV (cont.)
Summary of Volatile Organic Compound
Concentrations in Soils
October 25-31, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD 15	BBD 15	BBD 16	BBD 16	BBD 17	BBD 17	BBD 17	BBD 19	BBD 20
Sample Depth (ft):	5-7	15 (Field Blank)	1-2	5-8 8-10	0-1	0-1 (Lab Dup)	S	0-1	Water (Field Blank)
PRIORITY POLLUTANTS (ppb)									
Acrolein (ppm)				ND 1	ND 1				
Acrylonitrile (ppm)				ND 1	ND 1				
Vinyl Chloride	ND 20	ND 5	ND 20	ND 20	89	170	170	ND 20	ND 5
Chloroethane					ND 20	ND 20	33		
Methylene Chloride					130	91	740		
1,1-Dichloroethylene					ND 20	ND 20	28		
1,1-Dichloroethane					250	210	1000		
1,2-Dichloroethylene					150	120	1100		
Chloroform					41	21	100		
1,2-Dichloroethane					36	32	78		
1,1,1-Trichloroethane					510	211	850		
1,2-Dichloropropane					ND 20	ND 20	52		
Trichloroethylene	ND 20		ND 20	ND 20	240	210	830		
Benzene	60		57	30	130	87	220		
1,1,2-Trichloroethane	ND 20		ND 20	ND 20	100	92	220		
1,1,2,2-Tetrachloroethylene			ND 20		94	71	290		
Toluene			930		7500	6400	14000		
Chlorobenzene	ND 20		ND 20		30	22	49		
Ethylbenzene	87		830		2200	1600	2700		
1,2 & 1,4-Dichlorobenzene	ND 20	ND 5	ND 20	ND 20	61	79	93	ND 20	ND 5
Total Priority Pollutants	147	ND 5	1817	30	11561	9446	22553	ND 20	ND 5

Notes: ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

ATTACHMENT 8-46

Table IV (cont.)
Summary of Volatile Organic Compound
Concentrations in Soils
October 25-31, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD 1	BBD 2	BBD 4	BBD 8	BBD 12	BBD 13	BBD 13	BBD 14
Sample Depth (ft):	0-1	0-1	0-1	0-1	0-1	0-1	4 (field blank)	0-1
NON PRIORITY POLLUTANTS (ppb)								
1-Butanol	ND 20	ND 20	50	ND 20	ND 20	ND 20	ND 5	ND 20
Isopropylcyclopropane			ND 20		ND 20	ND 20		
[illegible]lenes			28000		ND 20	ND 20		
[illegible]Xylene			28000		38	1500		
o,p-Xylene			ND 20		47	1200		
[illegible]clopropane					ND 20	ND 20		
[illegible]etone								
[illegible]ethyl Sulfide								
[illegible]opropanol								
[illegible]rbon Disulfide								
[illegible]thyl Ethyl Ketone								
[illegible]on 113								
[illegible]ohexane								
[illegible]ne								
[illegible]yl Isobutyl Ketone								
[illegible]ethyl-2-Pentanol								
[illegible]12 Aliphatic Hydrocarbons			ND 20			ND 20		
[illegible]11 Aliphatic Hydrocarbons			190			70		
C7H16 Aliphatic Hydrocarbons			35			ND 20		
C8H16 Aliphatic Hydrocarbons			30		ND 20	ND 20		
[illegible]8H10 Aromatic Hydrocarbons			2600		75	150		
C9H12 Aromatic Hydrocarbons			430		31	130		
C9H12 Aromatic Hydrocarbons			3400		ND 20	330		
C9H12 Aromatic Hydrocarbons			ND 20			60		
C9H12 Aromatic Hydrocarbons			3300			ND 20		
C10H14			ND 20					
C10H20			ND 20					
Styrene	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 5	ND 20
Total Non Priority Pollutants	ND 20	ND 20	86035	ND 20	191	3440	ND 5	ND 20

Notes: ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

Table IV (cont.)
Summary of Volatile Organic Compound
Concentrations in Soils
October 25-31, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD 15	BBD 15	BBD 16	BBD 16	BBD 17	BBD 17	BBD 17	BBD 19	BBD 20
Sample Depth (ft):	5-7	15 (Field Blank)	1-2	5-8 8-10	0-1	0-1 (Lab Dup)	S	0-1	Water (Field Blank)
NON PRIORITY POLLUTANTS (ppb)									
1-Butanol	ND 20	ND 5	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 5
Isopropylcyclopropane			ND 20	ND 20			ND 20		
Xylenes			ND 20	ND 20			ND 20		
m-Xylene			1400	43			3900		
o,p-Xylene			1200	23			3400		
Cyclopropane			ND 20	ND 20	ND 20	ND 20	30		
Acetone					130	130	70		
Dimethyl Sulfide					ND 20	ND 20	30		
Isopropanol					ND 20	ND 20	50		
Carbon Disulfide					30	15	50		
Methyl Ethyl Ketone					170	140	110		
Freon 113					ND 20	ND 20	20		
Cyclohexane					40	20	50		
Hexane					25	15	25		
Methyl Isobutyl Ketone					730	500	550		
4-Methyl-2-Pentanol					160	85	140		
C6H12 Aliphatic Hydrocarbons				ND 20	30	35	100		
C7H14 Aliphatic Hydrocarbons				70	40	80	120		
C7H16 Aliphatic Hydrocarbons				ND 20	ND 20	ND 20	ND 20		
C8H16 Aliphatic Hydrocarbons	ND 20			30	ND 20	ND 20	ND 20		
C9H10 Aromatic Hydrocarbons	300		ND 20	ND 20	ND 20	ND 20	ND 20		
C10H12 Aromatic Hydrocarbons	910		40		40	35	60		
C11H16 Aromatic Hydrocarbons	580		ND 20		60	55	80		
Aromatic Hydrocarbons	550				190	200	300		
C8H10 Aromatic Hydrocarbons	ND 20				120	90	150		
C9H12					ND 20	ND 20	ND 20		
C10H14					ND 20	ND 20	ND 20		
Styrene	ND 20	ND 5	ND 20	ND 20	ND 20	280	450	ND 20	ND 5
Total Non Priority Pollutants	2340	ND 5	2640	166	1765	1680	9685	ND 20	ND 5

Notes: ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

ATTACHMENT 8-43

Table IV (cont.)
Summary of Volatile Organic Compound
Concentrations in Soils
November 27 - December 17, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD C1	BBD C1	BBD C2	BBD C2	BBD C2	BBD C3	BBD C3	BBD C3	BBD C4	BBD C4
Sample Depth (ft):	0-2	5-7	5-7	5-7 (Lab Dup)	10-12	5-7	15-17	20-22	5-7	15-17
PRIORITY POLLUTANTS (ppb)										
Acrolein (ppm)										
Acrylonitrile (ppm)										
Vinyl Chloride	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20
Chloroethane										
Methylene Chloride										
1,1-Dichloroethylene										
1,1-Dichloroethane										
1,2-Dichloroethylene										
Chloroform										
1,2-Dichloroethane										
1,1,1-Trichloroethane										
1,2-Dichloropropane										
Trichloroethylene		ND 20	ND 20	ND 20		ND 20			ND 20	ND 20
Benzene		410	50	51		265			90	26
1,1,2-Trichloroethane		ND 20	ND 20	ND 20		ND 20			ND 20	ND 20
1,1,2,2-Tetrachloroethylene			ND 20	ND 20		ND 20			ND 20	ND 20
Toluene			71	84		1700			2200	20
Chlorobenzene		ND 20	ND 20	ND 20		330			650	ND 20
Ethylbenzene		2300	ND 20	ND 20		3700			790	10
1,2 & 1,4-Dichlorobenzene	ND 20	ND 20	ND 20	ND 20	ND 20	320	ND 20	ND 20	87	ND 20
Total Priority Pollutants	ND 20	2710	121	135	ND 20	6315	ND 20	ND 20	3817	56

Notes: ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

ATTACHMENT B-49

Table IV (cont.)
Summary of Volatile Organic Compound
Concentrations (ppb) in Soils
November 27 - December 17, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD C1	BBD C1	BBD C2	BBD C2	BBD C2	BBD C3	BBD C3	BBD C3	BBD C1	BBD C1
Sample Depth (ft):	0-2	5-7	5-7	5-7 (Lab Dup)	10-12	5-7	15-17	20-22	5-7	15-17
NON PRIORITY POLLUTANTS (ppb)										
1-Butanol	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20
Isopropylcyclopropane		ND 20	ND 20	ND 20		ND 20			70	
[illegible]enes		800	130	140		9600			1300	
[illegible]ylene		ND 20	ND 20	ND 20		ND 20			ND 20	
o,p-Xylene										
Cyclopropane										
Acetone										
Dimethyl Sulfide										
Isopropanol				ND 20	ND 20				ND 20	
Carbon Disulfide				20	36				40	
Methyl Ethyl Ketone				ND 20	ND 20				ND 20	
Freon 113									ND 20	
Cyclohexane									50	
Hexane			ND 20	ND 20					ND 20	
Methyl Isobutyl Ketone			120	120						
4-Methyl-2-Pentanol			ND 20	ND 20						
C6H12 Aliphatic Hydrocarbons						ND 20			ND 20	
C7H14 Aliphatic Hydrocarbons						200			150	
C7H16 Aliphatic Hydrocarbons						ND 20			30	
C8H16 Aliphatic Hydrocarbons		ND 20				ND 20			ND 20	
[illegible]10 Aromatic Hydrocarbons		1100				330			80	
C9H12 Aromatic Hydrocarbons		ND 20				2000			800	
C9H12 Aromatic Hydrocarbons		ND 20				ND 20			ND 20	
C9H12 Aromatic Hydrocarbons		ND 20				ND 20				
C9H12 Aromatic Hydrocarbons		260				ND 20				
C10H14		ND 20				100				
C10H18						100			ND 20	
C10H20						ND 20			180	
Styrene	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20	ND 20
Total Non Priority Pollutants	ND 20	2160	250	280	36	12230	ND 20	ND 20	5700	ND 20

Notes: ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

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Table V
Summary of Metals, Phenol, Cyanide & Pesticides Concentrations
in Soils January 18, 1985 and October 25-31, 1985
Bayonne Barrel & Drum Company

Sample No.	BBD10	BBD 4	BBD 8	BBD 11	BBD 14	BBD 15	BBD 16	BBD 17
Sample Depth (ft):	(notes)	0-1	0-1	0-1	0-1	0-1	5-8 8-10	0-1
		ash pile	drum storage					incinerator
METALS (ppm)								
Antimony		13			8.4		4.0	6.0
Arsenic	0.002	17	390	51	8.4	55	2.9	56
Barium	ND 1.0		22	10		10		
Beryllium		0.64			0.28		0.32	0.5
Cadmium	0.21	1300	34	4.72	0.52	5.08	0.2	6.56
Chromium	ND 0.02	3400	1900	43.2	27	52.0	7.0	2300
Copper		15500			15.6		4.64	128
Lead	2.6	8400	8400	380	92	6400	15	370
Mercury	0.0004	2.2	13.6	1.3	1.6	4.1	0.62	1.6 (2.3)
Nickel		62.4			25		5.28	56.8
Silver	ND 0.02	0.92	3.1	0.48	0.3	0.84	0.2	1.7
Selenium	0.001	0.03	0.046	0.004	0.019	0.042	ND 0.004	0.023
Thallium		ND 0.4			ND 0.4		ND 0.4	ND 0.4
Zinc		4520			71.2		15.4	5040
Phenol (ppm)		15			ND 0.5		2.8	20
Cyanide (ppm)		2			ND 0.1		ND 0.1	0.5
PESTICIDES (ppb)								
Endrine	ND 1.0							
Lindane	ND 1.0							
Methoxychlor	ND 1.0							
Toxaphene	ND 1.0							
2,4-D	ND 1.0							
2,4,5-TP Silvex	ND 1.0							

Notes: Sample BBD 10, collected January 18, 1985, from furnace residue pile, is a composite sample analyzed for EP Toxicity.
ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

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Table VI
Summary of Base/Neutral - Pesticide Extractable
& Acid Extractable Compounds Concentrations in Soils
October 25-31, 1985

Sample No.	BBD 4	BBD 14	BBD 16	BBD 17	BBD 12	BBD 13	BBD 15
Sample Depth (ft):	0-1	0-1	5-8 8-10	0-1	0-1	0-1	0-1
BASE/NEUTRAL - PESTICIDES (ppm)							
Butyl Phthalate	ND 2.60		ND 4.80	19.3	ND 0.5	ND 0.5	ND 0.5
Butylphthalate				17.0	ND 0.5	ND 0.5	ND 0.5
2-Methyl Naphthalene				15.5	0.68	1.5	ND 0.5
Anthracene				ND 0.5	ND 0.5	0.65	1.0
Benzo(b)fluoranthene					ND 0.5	0.91	1.9
Benzo(a)pyrene					ND 0.5	1.3	2.3
bis(2-Ethylhexyl)phthalate		410			7.25	6.3	2.8	
Chrysene					ND 0.5	2.3	2.9
Dinitrotoluene						1,9	ND 0.5
Fluorene						2.5	5.2
Phenanthrene					ND 0.5	0.63	ND 0.5
Naphthalene		420			1.2	1.7	ND 0.5
Fluoranthrene					ND 0.5	2.8	4.7
Pyrene						4.0	5.8
1,2-Diphenylhydrazene						0.52	ND 0.5
Benzo(a)anthracene						ND 0.5	2.9
Benzo(ghi)perylene						ND 0.5	0.87
Indeno(1,2,3-cd)pyrene				ND 0.5	ND 0.5	ND 0.5	0.87
Total Base/Neutral & Pesticides	ND 2.60	830	ND 4.80	51.8	9.13	27.01	31.24
Total ACID EXTRACTABLES (ppm)	ND 0.640(1)		ND 9.50(1)	ND 0.5	ND 0.5	ND 0.5	ND 0.5

Notes: ND = not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

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Table VII
Summary of Polychlorinated Biphenyls, Total Petroleum Hydrocarbons
& Volatile Organic Compound Concentrations
in Surface Sediment & Surface Water Samples
October 25-31, 1985
Bayonne Barrel & Drum Company

	Sediments				Water
Sample No.:	BBD S1	BBD S2	BBD S3	BBD S4	BBD W1
PARAMETER	Concentrations (ppm)				
PCB's	130	80		11.1	ND 1
Total Petroleum Hydrocarbons	23700		850	39400	670
PARAMETER	Concentrations (ppb)				
Volatile Organic Compounds					
Priority Pollutants		ND 20			ND 5
Toluene		ND 20		39	
Non Priority Pollutants		ND 20			
Acetone				25	
4-Methyl-2-Pentanol				20	

Notes: ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

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Table VIII
Summary of Polychlorinated Biphenyls , Total Petroleum Hydrocarbons, Metals,
Acid Extractables, Base Neutrals, Phenol & Cyanide
Concentrations in Ground Water
January 7,1986
Bayonne Barrel & Drum Company

Sample No.:	BBD C1	BBD C2	BBD C3	BBD C4	BBD C5	BBD C6
PARAMETER (units)						
PCB's (ppb)	ND 1	ND 1	ND 1	ND 10 (1)	53 80 (2)	ND 1
Total Petroleum Hydrocarbons (ppm)	2.8	3.7	4.8		2000	1.8
METAL CONSTITUENTS	Concentrations (ppm)					
Antimony				ND 0.5		
Arsenic				0.01		
Beryllium				ND 0.01		
Cadmium				ND 0.01		
Chromium				ND 0.01		
Copper				0.04		
Lead				ND 0.1		
Mercury				ND 0.002		
Nickel				ND 0.01		
Selenium				ND 0.007		
Silver				0.03		
Thallium				ND 0.1		
Zinc				0.03		
PARAMETER (units)						
Base/Neutrals (ppb)						
Di-N-Butylphthalate				28		
Naphthalene				14		
Acid Extractables (ppb)				ND 25		
Phenol (ppm)				ND 0.03		
Cyanide (ppm)				ND 0.004		

Notes: (1) PCB results are part of the priority pollutant - Base Neutral scan for the sample listed.
(2) Concentration (ppm) in sediments filtered out of water sample.
ND = Not detected at or above minimum detection limit indicated.
If no entry, analysis was not requested.

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Table IX
Summary of Volatile Organic Compound Concentrations in Ground Water
January 7, 1986
Bayonne Barrel & Drum Company

Sample No.:	BBD C1	BBD C2	BBD C3	BBD C4	BBD C5	BBD C6
CONSTITUENTS	Concentrations (ppb)					
PRIORITY POLLUTANTS (ppb)						
Chloroform	ND 5	ND 5	25	ND 5	ND 5	ND 5
1,1,1-Trichloroethane		5 (ND 5)	ND 5	ND 5		
Bromodichloromethane		ND 5	5	ND 5		
Benzene			ND 5	28	ND 5	
Toluene				5	150	
Chlorobenzene				ND 5	67	
Ethylbenzene				ND 5	1060	
1,2 & 1,4-Dichlorobenzene	ND 5	ND 5	ND 5	ND 5	76	ND 5
Total Priority Pollutants	ND 5	5	30	33	1353	ND 5
NON PRIORITY POLLUTANTS (ppb)						
Chlorofluoromethane	10	ND 5	ND 5	ND 5	ND 5	ND 5
Dichlorofluoromethane	70	ND 5		ND 5		
Di-isopropylether	15	ND 5		ND 5		
Diethylether	ND 5	10 (20)		30		
2,4,4-Trimethylpentene		10 (10)		ND 5	ND 5	
Xylene Isomers		ND 5		15	2000	
Cyclohexane				ND 5	60	
Methylcyclopentane					30	
Cycloheptane					100	
Isopropylbenzene					90	
n-Propylbenzene				ND 5	150	
Ethyl-Toluene Isomers				35	550	
Trimethylbenzene Isomers				ND 5	1400	
C9H10 Isomers	ND 5	ND 5	ND 5	ND 5	240	ND 5
Total Non Priority Pollutants	95	20 (30)	ND 5	80	4620	ND 5

Notes:
1. ND = Not detected at or above minimum detection limit indicated.
2. Laboratory duplicates in parentheses.
3. If no entry, analysis was not requested.

B-55

Results of Preliminary Investigations and Sampling in Proposed New Jersey Turnpike Right-of-Way at the Bayonne Barrel and Drum Property

Newark, New Jersey

Submitted to:

New Jersey Turnpike Authority

P.O. Box 1121

New Brunswick, New Jersey

Submitted by:

Louis Berger & Associates, Inc.

100 Halsted Street

East Orange, New Jersey

December 1986

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1.0 INTRODUCTION

The New Jersey Turnpike Authority (NJTA) in anticipation of the need to acquire the property of Bayonne Barrel and Drum (BB&D), has initiated through their consultant, Louis Berger & Associates, a preliminary investigation of the site to determine its potential for environmental contamination.

The BB&D property has been identified by USEPA as an unpermitted hazardous waste storage facility (in violation of 40 CFR 264.34(a)). This subjects it to a consent order requiring the owner to establish the extent of contamination and to provide for its cleanup through an approved closure plan (see Appendix A for the consent agreement and the USEPA's investigations). The satisfactory completion of this process may be required to satisfy ECRA.

The scope of the investigation conducted by Louis Berger & Associates, Inc. was limited to a reconnaissance level soil and groundwater sampling program. The samples were taken either on, or in, close proximity to the proposed right-of-way and were tested for 127 priority pollutants plus 40 other possible pollutants. The priority pollutants are a broad cross-section of chemicals designated as toxic pollutants under Section 307(a)(1) of the Clean Water Act.

The results of the site reconnaissance were intended to indicate the areal extent of contamination in the proposed right-of-way and whether the levels of contamination require a site cleanup. It did not cover portions of the property not under consideration by the NJTA for the 1985-90 widening project.

This report provides a description of the site, the methods of investigation, the results of analyses and their interpretation. The report is not intended to serve as a comprehensive working document for purposes of preparing plans and specifications for any required cleanup. For this reason no specific recommendations have been prepared.

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2.0 SITE DESCRIPTION

Bayonne Barrel and Drum (BB&D) is located at 150 Raymond Boulevard in Newark, New Jersey. The property is bounded by Routes 1 and 9 on the west and north, the New Jersey Turnpike on the east, and the constuction site, previously the Newark Drive-In Movie Theater, on the south (see General Site Map, Figure 1). The site consists of three tracts designated 1, 2, and 3 which correspond to the land ownership as indicated by the City of Newark. Tract 1 is approximately 11 acres and encompasses the buildings, operations, storage areas, a shredded tire pile and the proposed right-of-way. Tract 2, located in the southeast part of the site, is 5 acres. It contains empty drums, an ash pile and other refuse. Tract 3, owned by the Turnpike Authority and adjacent to the Turnpike right-of-way, is 1.4 acres. It is partly covered by a pile of shredded tires.

2.1 Site Characteristics

The BB&D site is characterized by its location in an old flood-plain of the Passaic River. Topographically, the site is relatively flat with a slight undulating slope towards the east and northeast. Elevations on the property range from approximately 10 to 15 feet above sea level. Drainage follows the topography and empties into drains that traverse the eastern border of the site near the Turnpike's fence. The stormwater sewer system drains into the Passaic River. There is no natural surface water on the site.

The site currently contains a number of buildings which were utilized for drum reconditioning, an incinerator, above ground and underground storage tanks, shredded tire piles and a large empty drum storage area (Figure 1).

2.2 Current Owner/Operator

Tract 1 is owned and operated by Bayonne Barrel and Drum Company, Inc. The five acre Tract 2 is owned by the BB&D's principal owner Frank Langella, but is utilized as part of the BB&D facility. The Bayonne Barrel and Drum Company, Inc. filed a petition under Chapter 11 of the Bankruptcy Code (11 U.S.C. 101, et seq.) on July 13, 1982. The 1.4 acre Tract 3, is owned by the NJTA.

2.3 Status of the Property

Bayonne Barrel and Drum Company was a reconditioner of storage drums. Since it filed for protection under the bankruptcy acts, a portion of the property has been leased and is used to repair and maintain trailers and cargo containers. Currently, the New Jersey Tire Pyrolysis System Company is seeking financial assistance from the Essex County Improvement Authority for the purpose of financing the acquisition of the land and existing buildings at BB&D. This company plans to operate a tire pyrolysis system to produce saleable products.

The previous site activities included the cleaning and reconditioning of drums using caustic solutions and incineration. These operations produced large amounts of spent solution, incinerator ash and sludge. The storage of these waste products, as well as the storage of the drums awaiting reconditioning, provide the potential for hazardous waste contamination.

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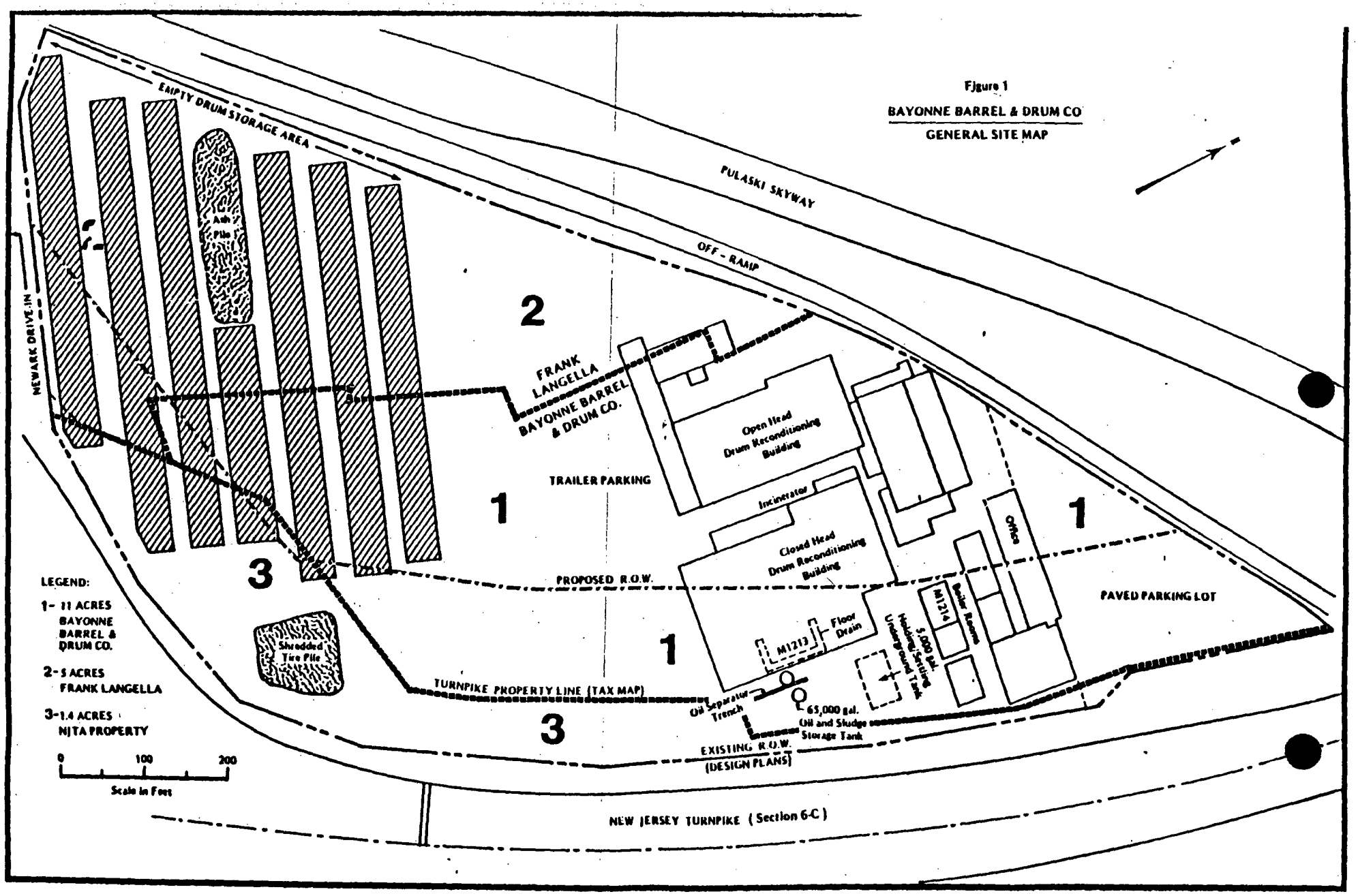

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As the operator of the site did not have a permit required under the authority of the Resource Conservation and Responsibility Act (RCRA) to operate a hazardous waste storage facility, a consent order was issued by the USEPA (Docket No. II RCRA-82-0115) charging BB&D with violating Sections 3004 and 3005 of the Act (see Appendix A). The consent agreement accompanying the consent order required Bayonne Barrel and Drum to take the following actions:

1. Submit a detailed soil and aqueous sampling plan.

2. Remove all hazardous waste piles and contaminated soil.

3. Submit a groundwater monitoring plan to determine if contamination of groundwater occurred and the extent and direction of movement of any contaminated plume.

4. Submit a closure plan that satisfies the requirements of RCRA under 40 CFR 265.112, 40 CFR 265.197 and 40 CFR 265.351.

After the consent order was issued, BB&D hired Dan Raviv Associates, Inc. to conduct a soil and groundwater monitoring program. The original sampling plan that Dan Raviv & Associates proposed in October, 1984 was later modified to reflect comments by USEPA and NJDEP. The modifications were agreed to in an exchange of letters during the summer of 1985. Though this program has been initiated, the extent to which it has been implemented and any results that were obtained has not been made known. Although the site is being monitored by the USEPA Region II, no actions are known to have been taken to proceed with any site cleanup.

Other than the consent order and agreement, no other violations, permits or enforcement actions are known to be in effect or pending.

2.4 Historical Use

The area encompassed by the BB&D property is believed to have been part of the tidal marshes associated with the lower reaches of the Passaic River. At some time the area appears to have been covered with fill. It is not clear to what extent this fill was dumped as waste, and what was placed there for construction purposes. Historical maps and air photos indicate that parts of the area now occupied by the Bayonne Barrel and Drum company have been used for drum storage/reconditioning since at least 1931. Additionally, substantial portions of the site have also been utilized for waste disposal.

The earliest reference to a drum recycling facility at the site is a 1931 Sanborn Atlas of Newark which shows an industrial facility operating at a site owned by the B & F Co., Inc. However, the buildings are labelled "tenant occupied". Most buildings are shown to be storage buildings. Crate and drum storages are located east of the original site buildings, outside the current site boundaries. Two of the smaller buildings are labeled as "drum cleaning" areas (Figure 2, Area A). The 1939 Newark Directory lists the Bayonne Steel Drum company with James Allen as President. The 1942

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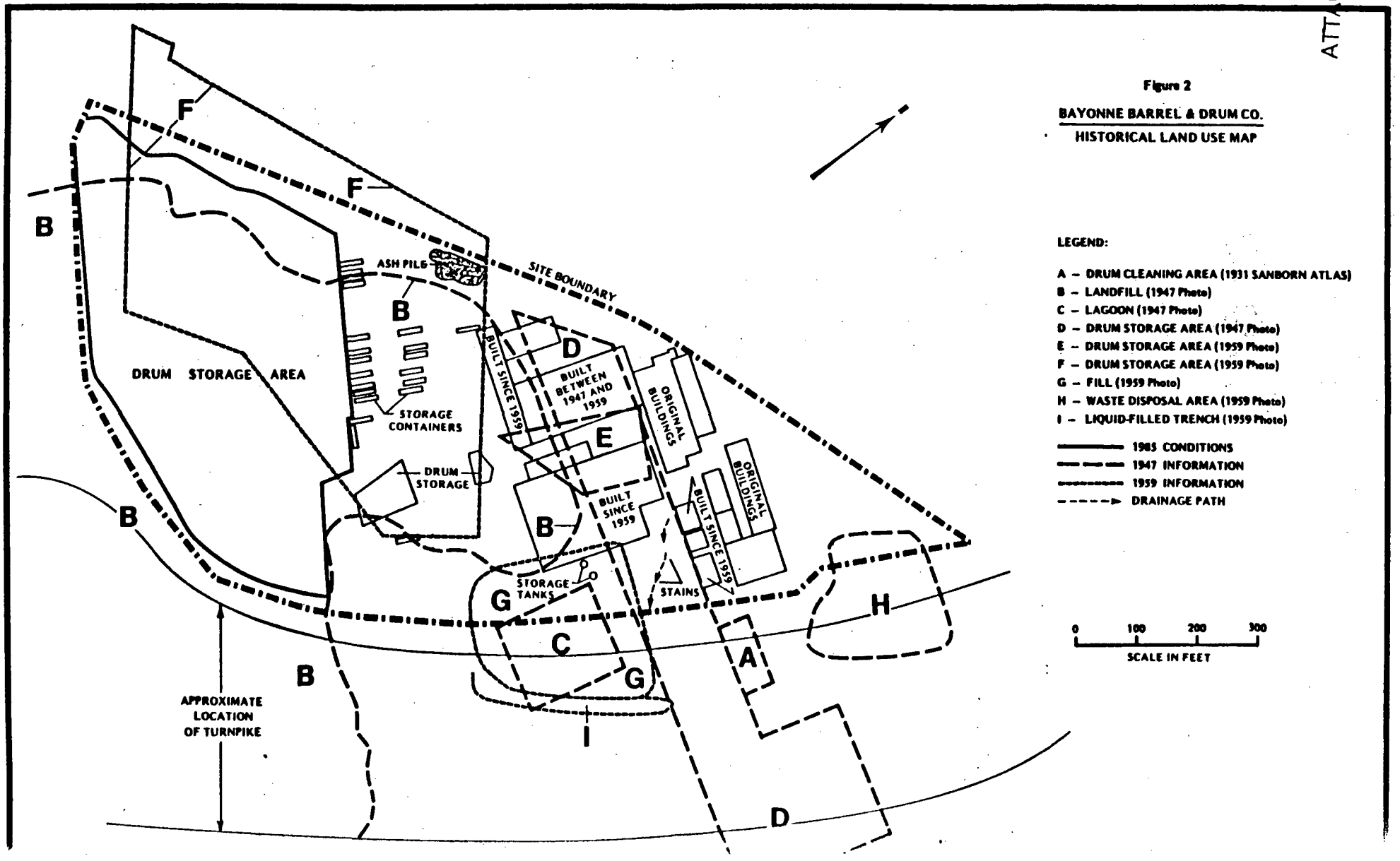

Newark Directory shows the same company with Frank Langella (the current owner) and David Pacrulli as owners. A 1943 Newark Directory indicates that the establishment's name was changed to its current name of Bayonne Barrel and Drum Company, but the owners are still listed as Mr. Langella and Mr. Pacrulli.

Aerial photographs from 1947 to 1985 document physical changes at the site. Figure 2 graphicly displays these changes. Following is a chronologic narrative of the significant changes that have impacted the site's present environmental setting.

1947 - Aerial photographs taken on April 28, 1947 show that portions of an adjacent landfill covered the southern two thirds of the current site area (B). A short road provided access between the drum storage facility and the landfill. One waste lagoon (C) was observed at the site in a location which straddles the current eastern site boundary. Drainage channels connected the lagoon to drainage channels leading southeast to the Passaic River. A large open storage area (D) was located south of the site buildings. Several thousand drums were stored in this area and ground stains were seen surrounding the drum stacks. A substantial portion of areas C and D are now overlain by the Turnpike.

1959 - The construction of the New Jersey Turnpike (Interstate 95) altered the pattern of drum storage at the site. Photographs taken on April 15, 1959 show that drum storage E had been moved to the site's southwest corner extending slightly beyond the current site boundary. A new building has been constructed and a small concentration of drums (F) was noted east of that building. The lagoon (C) previously seen along the site boundary has apparently been filled in (G). Additionally, a small waste disposal area (H) was located in the northeast corner of the site. Drainage ditches at the eastern edge of the site apparently drained into a liquid-filled trench (I) adjacent to the old lagoon location.

1985 - Recent photographs (July 3, 1985) show that the areal extent of open drums has decreased only slightly from that used in 1959. Six new buildings were noted in the site's northern area, and several storage containers (possibly truck trailers) were observed north of the drum storage area. An area of dark staining, indicating a recent spill, was seen at the eastern edge of the site. Ground stains were also observed in the drum storage area. A large mound of dark material (possibly ash) was seen at the western edge of the site. Waste disposal previously seen in the northeast corner of the site (1959) was no longer evident.

PHOTO SOURCES:

April 28, 1947 - Black and white aerial photographs at an approximate scale of 1"=1000' from Robinson Aerial Surveys, Inc., Newton, NJ.

April 16, 1959 - Black and white aerial photographs at an approximate scale of 1"=1500' from Robinson Aerial Surveys, Inc., Newton, NJ.

July 3, 1985 - Black and white aerial photograph at an approximate scale of 1"=1000' from HNTB engineering plans for 1990 NJ Turnpike widening.

A Foxboro Century Organic Vapor Analyzer (OVA), with a flame ionization detector, was also used as a screening device for the measurement of organic vapors during well development. During the drilling of monitoring well #2, OVA readings reached 400 deflection units.

3.1.2 Personnel Protection Equipment

The determination of protection levels was made by the Site Safety Officer. The information that aided in making the decision was the air quality measurements, the type of work being performed and the visual evidence of known and suspected hazards.

Based on PID measurements in ambient air, field personnel were suited to Level D protection. During the drilling of monitoring well #2, the field personnel suited up to Level C. This required the use of a half-face respirator with a particulate filter.

3.1.3 Decontamination Procedures

When leaving a site all personnel were required to decontaminate themselves and dispose of all nonreusable equipment. Boots were scrubbed clean on site with soapy water and dried. Tyvek suits and gloves, and air cartridges and filters were disposed of in trash bags. Exposed skin was washed with soap and water. All wash water was disposed of on-site.

3.2 Sampling Plan

For the reconnaissance-level investigation conducted, sampling of soils and of groundwater was planned. The sampling locations for both soils and groundwater are shown on Figure 3. The soil sampling sites are designated by a five character alpha numeric code. The groundwater monitoring wells are identified as MW2 and MW3. Well MW1 occurs on the adjacent drive-in movie property which is not addressed in this report. The rationale for sample locations and the methodology employed for soil sampling and for groundwater sampling are discussed in the following sections as well as the physical description of the material encountered during sampling.

3.2.1 Soils

The determination of the soil sampling points was based on both random and biased sampling. Random sampling methodology was employed for all the discrete samples that were taken and the composite sample locations were chosen by biased sampling. The random sampling methodology was performed by dividing the area at BB&D that is within the Turnpike's proposed right-of-way into a grid of 30 blocks, assigning numbers to each block, and then statistically selecting blocks for sampling point location by using a table of computer generated random numbers. When the number of matching numbers equalled the predetermined number of samples to be taken, the process was stopped. For the purpose of preparing the sampling plan no division was made between property currently owned by NJTA and that owned by Bayonne Barrel & Drum. The area within the fenceline is being operated as a single entity irrespective of property lines and the purpose of the investigation was to determine the level of contamination in the construction area.

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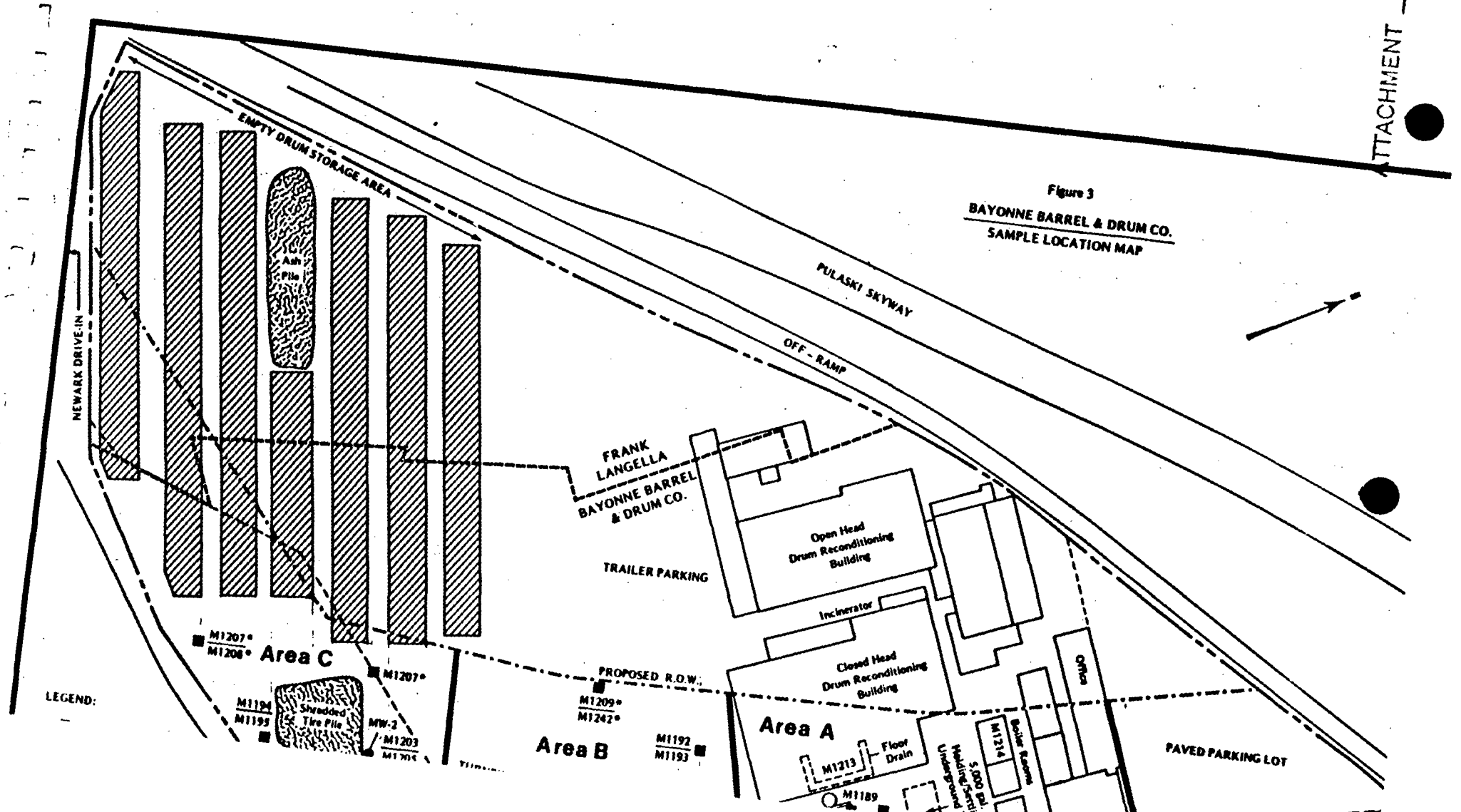
Figure 3

BAYONNE BARREL & DRUM CO.

SAMPLE LOCATION MAP



The biased sample locations were selected due to site specific criteria: drainage, previous land use, and location of random samples. Nearly all surface and subsurface runoff within the proposed right-of-way flows to the storm sewer that transects the eastern border of the site. Therefore, any leachate emanating from the drums or ash pile as well as contaminants leaking from the surface and subsurface storage tanks in the northeast part of the site were intercepted by the soil borings.

The number of samples to be taken was based on a field investigation of the site, historical land use, and USEPA's investigations. Because the purpose of the site reconnaissance investigation was to determine whether the site is contaminated or not, and if so by what, it was decided to take 5 discrete samples at two different depths, 0-18 and 18-36 inches below land surface, for a total of 10 discrete samples. Two composite samples, comprised of three (3) different sample locations each at two distinct depths, were collected for a total of four composite samples. Due to local conditions, there were six discrete 0-18 inch samples taken and only four 18-36 inch samples. Of the four composite samples, one of the two 18-36 inch samples was comprised of only two samples.

Sediment samples, comprised of sediment collected from the floors, floor drains and scrapings off the walls of the buildings, were taken from locations inside the closed drum reconditioning building and in the boiler room. Each building sample was composed of five separate samples.

Discrete or grab samples are retrieved at a single point. Composite samples are samples comprised of two or more discrete samples taken at several different horizontal or vertical locations. The composites at BB&D were taken at three different horizontal locations and composited in the laboratory where the analyses were performed.

Compositing is performed during site reconnaissance when the nature and the extent of the contamination is unknown. It allows for determining the general areal extent of contamination and the nature of the contamination without requiring extensive sampling. The disadvantages are that the compositing may reduce contaminant levels to safe levels. By diluting a contaminated sample with two relatively clean samples the source of contamination is unknown. Another disadvantage is that volatile chemicals in a sample are lost during the compositing process. Compositing is never used when point specific chemical data is needed. Therefore, by discriminately using both discrete and composite samples, the general areal nature and extent of the contamination was able to be assessed. The vertical sampling at 0-18 and 18-36 inches below ground surface was intended to demonstrate whether only the surface material was contaminated, or if vertical migration of contaminants had occurred.

The actual number of composite samples was greatly reduced with respect to the sampling plan originally proposed. Discussions with NJDEP officials indicated a strong reluctance to accept results from composite samples due to the problems stated above. The sampling method adopted presented the best compromise between obtaining a sufficiently wide coverage of the area while having a reasonable number of discrete samples to support our findings to NJDEP.

Discrete soil samples were also taken during installation of the monitoring wells at depths above and below the water table. It was decided to limit the number of samples analyzed to six from both the Bayonne Barrel & Drum and the Newark Drive-In Movie Site. Therefore, 24 inch samples were taken every five feet and examined. Based on this, the following four samples were analyzed and the remainder discarded. At monitoring well #3 only one sample was analyzed, from 0-18" below land surface (b.l.s.), because of the poor recovery below the water table. For monitoring well #2, three discrete samples were analyzed, one above the water table and two below the water table. The depths were 3-5 feet, 13-15 feet and 17 1/2-19 1/2 feet b.l.s., respectively. The boring logs for the monitoring well are presented in the Groundwater section.

3.2.1.1 Sampling methods

A split spoon was used to retrieve all soil samples, including those in the monitoring well boreholes. It is composed of carbide steel, and is 24 inches long with a 2-inch outer diameter. The method for collecting samples using the split spoon is as follows:

a. Assemble the sampler by aligning both sides of the barrel and then screwing on the bit on the bottom and the heavier head piece on top.

b. Place the sampler in a perpendicular position on the material to be sampled.

c. Drive the sampler utilizing a sledge hammer (140 lb. weight with a 30" drop when using the well rig for sampling in the boreholes).

d. Record the length of the tube that penetrated the material (also the number of blows needed to reach that depth when using the well rig).

e. Withdraw the sampler, and open it by unscrewing the bit and the head piece and then splitting the barrel.

f. Record the physical description of the material and place it into the appropriate sample containers.

g. Decontaminate sampler using procedures outlined in Appendix C. In some locations where the split spoon sampler could not penetrate the material, a motor driven auger was used to break up the material, and the sample was taken using dedicated plastic scoops. This normally occurred at the surface where compaction of the material was most severe.

A description of materials encountered at each sample site are shown in Table 1.

3.2.1.2 Sample containers

Soil samples were taken from the sampler and placed in containers that have been determined by the USEPA to be adequate for the types of analyses the

Table 1

SOIL BORING DESCRIPTIONS

A. Discrete Soil Samples

Boring #	Depth (Inches)	Soil Description
M1188	0-8	Black muck, some gravel; oily odor
M1189	0-18	Brown silt and gravel
M1190	2- 8	Dark brown silty sand; friable
	8-13	Dense silty sand, trace glass
	13-18	Dark black sandy silt, some fill (plastic, china, whitish silica based material)
M1191	18-24	Brownish, black silty sand; some fill (asphalt glass, plastic, waste concretions)
	24-30	Same with trace plastic
	30-36	Fill (slag, glass, iron/sand concretions); distinct petroleum odor.
M1192	0-18	Dense black sand and fill (plastic, brick, slag)
M1193	18-24	Black silt; some fill (brick, glass, cardboard)
	24-36	Same with asphalt and wood; moist
M1194	0-7	Gravelly, f-m sand, trace glass
	7-12	F-m brown sand
	12-17	C gravel and c-m white sand; moist
	17-18	Orange-brown silty clay; trace organic smears
M1195	18-26	F-m brown silty sand
	26-29	Same, trace asphalt-like material
	29-33	Fill (greyish-black asphalt-like material and coarse fragments with trace black smears)
	33-36	Dense sand and gravel; some conglomerate, moist
M1196	0-7	Brownish black silty sand, some gravel, little asphalt
	7-14	Same with some asphalt
	14-18	Reddish brown silt and fill (brick conglomerate, trace asphalt)
M1197	18-25	Black sandy clay and fill (asphalt, brick)
	25-31	Fill (brick, coarse fragments (>1.5"), concretions, trace plastic)
	31-36	Brownish black silt, little black smears and weathered brick. Distinct petroleum odor.

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Table 1 (continued)

Boring #	Depth (Inches)	Soil Description
B. Composited Soil Samples		
M1207 (6A)	0-4	Dark brown silty sand, some slatey coarse fragments, trace asphalt-like material
	4-8	Same, but more orange-colored sand with little coarse fragments and trace glass.
	8-14	Same, some whitish sand with little black streaks, trace glass
	14-18	C white sand and m-c brown sand, trace black smears, little cemented, rusted fill; moist
M1208	18-24	Gravelly m-c brown sand
	24-30	C white sand, some orange brands & trace pebbles
	30-36	Same, some coarse fragments, trace black streak
M1207 (6B)	0-4	Greyish brown silty sand, trace orange-green streaks
	4-10	Same, black with some fill (glass and wood)
	10-18	Fill (Asphalt-like matrix, some white specks and orange material, trace wood and glass)
No 18-36 inch sample taken for composite M1208 at 6B.		
M1207 (6C)	0-8	Brownish, black silty sand, some coarse frags.
	8-15	Same, some broken brick and asphalt-like material. Slight petroleum odor.
	15-18	Orange, brown silty sand and gleyed silty sand, trace brick and black streaks.
M1208	18-24	Black sandy loam; distinct oily texture and odor
	24-30	Dense sandy loam, some fill (brick, plastic): distinct petroleum odor.
	30-33	Sandy loam and fill (glass, wood, asphalt-like material, paint streaks); distinct oily odor
	33-36	Same, little plastic, some wood, distinct odor
M1209 (7A)	0-6	Sandy loam; little orange streaks, brick; weak petroleum odor.
	6-12	Dense sandy loam, trace white flakes & black laminates; strong petroleum odor.
	12-18	Fill (asphalt-like material, white flakes, green and red streaks, glass, sand concretions).
M1242	18-22	Black sand, some pebbles and fill (asphalt-like material, plastic, glass)
	22-30	Fill (glass, pebbles, wood fibers, green marl, brick
	30-36	Same, little dense red clay, petroleum-saturated

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Table 1 (continued)

Boring #	Depth (Inches)	Soil Description
11209	0-4	Black sandy loam, trace small pebbles; friable
7B)	4-8	Same, some fill (Slag, brick and glass)
	8-14	Same, little rainbow colored bands; moist
	14-18	Fill (asphalt-like material); trace oily odor.
11242	18-24	Fill (same, but little wood); slight oily odor
	24-30	Fill (asphalt-like material, white coatings, spongy material, sand and other)
	30-36	Same, all black trace-white coatings. Weak oily odor.
11209	0-10	Black sandy silt and m-c gravel
7C)	10-14	Fill (asphalt-like substrate, trace slag)
	14-18	Same, little orange coated slag; distinct petroleum odor.
11242	18-24	Fill (wood fibers, asphalt-like material, glass, slag); moist; distinct petroleum odor.
	24-30	Same
	30-36	Same, some brick

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sample is to undergo. These containers and the types of analyses they are appropriate for are defined by EPA in 40 CFR part 136 for aqueous samples and EPA's manual of Test Methods for Evaluating Solid Waste (SW 846; July 1982) for soil/sediment samples. The sample containers were prepared by Environmental Testing and Certification (ETC), the analytical laboratory used, and placed in preconfigured insulated and cooled shuttles.

The soil samples at BB&D were analyzed for 127 priority pollutants plus the next 40 highest peaks that were detected on the gas chromatograph. "Peak" is the parameter that defines concentration. By allowing for analysis of forty constituents that might have escaped detection if only target chemicals were specified, greater flexibility was incorporated into the analytical plan.

The term "priority pollutants" describes the pollutants' relative frequency of occurrence at potential hazardous waste sites, and represents a cross-section of inorganic and organic chemical groups. The 127 priority pollutants are the substances designated as toxic pollutants under Section 307(a)(1) of the Federal Clean Water Act (43 CFR 4108, January 1978), and are depicted in Table 2. In this table, NPDES is an abbreviation for National Pollutant Discharge and Elimination System. CAS stands for the Chemical Abstract Service, while MDL is the Minimum Detection Limit for each compound, measured in micrograms (10^{-6} grams) per liter of sample being tests.

3.2.2 Groundwater

Samples of groundwater on the BB&D site were obtained from two wells along the eastern boundary. The objective in locating these two wells was two-fold: first, to ascertain whether groundwater contamination existed, and second, to see if there were noticeable differences in the nature and degree of contamination. If there were marked differences in either of the two factors, one or all of the following conditions may exist: different sources of contamination (i.e. leaking drums or leaching ash piles), unconnected hydrologic systems, or varying proximities to a single contaminant source. Both wells were downgradient of the potential contaminant sources on the site. Background conditions or the exact direction of groundwater flow could therefore not be determined. This data is not needed until contamination has been verified. If contamination is detected, then at a minimum the installation of an upgradient well and one more downgradient well will be needed.

3.2.2.1 Monitoring Well Installation

The installation of both monitoring wells 2 and 3 was performed in accordance with NJDEP's Bureau of Groundwater Management recommended procedures. Though not required for this investigation, adhering to these procedures will insure their acceptance as New Jersey Pollutant Discharge Elimination System (NJPDES) monitoring wells, should the site prove to have contaminated groundwater. A NJPDES permit is required by owners/operators of sites that have the potential to be discharging effluent (i.e., contaminated leachate) to the groundwater.

The borehole for installation of the monitoring wells was made by a hollow stem auger attached to a well rig. The auger was steam cleaned prior to use and between wells. It was scaled with chalk to every 6 inches to determine the sample depth. Samples were taken at the last two feet of every 5 foot segment (i.e. 3-5 feet, 8-10 feet below land surface). The results of the boring logs for the monitoring wells are in Appendix D. Both boreholes had distinct petroleum odors with significant amounts of tarlike material.

Approximate depth of hole and depth to water table were made using a weighted string. Borings were generally made to a depth of 10 to 12 feet below the water table. After the hole was bored to the desired depth, the augers were disconnected from the rig but left in the hole to support the sidewalls. The hole was flushed clean of soil cuttings using a roller bit and pressurized potable water. The flushing operation ceased when the water discharging from the hole was clean. The roller bit was then removed from the hole, and the well screen installed into the borehole with the hollow stem auger still in place. The 4 inch O.D. (outer diameter) PVC well screen had a plastic cap attached to its bottom and was threaded into a 4 inch O.D. well casing at its top before placing it into the borehole. The top of the casing rose to approximately two feet above the ground surface. The area between the borehole walls and the well screen (the annular space) was filled with #2 Morie sand to maintain a good hydraulic connection between the aquifer material and the well screen. The auger was slowly lifted out of the borehole as the annular space was being filled. Eventually the auger was removed and the sand was emplaced until it was 6-12 inches above the well screen. A bentonite/cement grout was then injected into the hole until it was flush with the ground surface, and a 6" O.D. steel casing placed over the inner casing and set into the sealant (bentonite/cement mixture). Next, the steel casing was locked and security posts were placed around the well. All materials and specifications for monitoring wells 2 and 3 are detailed in Appendix D along with their permits from the Bureau of Water Allocation.

3.2.2.2 Well Development

Well development took place soon after installation of the wells, in order to create a good hydraulic connection between the aquifer and the well screen. Development of a monitoring well can be accomplished by a variety of methods and equipment. A well is satisfactorily developed when pumping the well yields a sand-free discharge.

Monitoring well #3 was developed with a hand bailer until the well went dry. Its discharge was extremely turbid but did not contain much sand. Monitoring well #2 was developed by pumping with a suction pump for approximately 20 minutes at a rate exceeding 10 gpm. Its discharge was relatively turbid free.

3.2.2.3 Groundwater Sampling

Seven days after the wells were developed, but prior to their sampling for chemical analyses, samples were collected and tested for total organic carbon (TOC), and if turbid, for grain size distribution of the sediment. (Measuring these constituents is recommended by the USEPA for assessing the integrity of monitoring well installation and development on RCRA sites.)

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The water was purged from each well using a bladder pump with a check valve for regulating discharge. The purge water for sediment size distribution was collected in glass containers, while the TOC samples were collected in the appropriate container and preserved. All containers and preservatives used for storing groundwater samples after collection were laboratory cleaned and composed of materials appropriate for the intended analyses in accordance with 40 CFR 136. The appropriate containers for each type of analyses is listed in Appendix C. The analyses for both parameters were performed the next day. The results of the grain size distribution and TOC analyses indicated that the majority of the purge water was silt, clay and organic material with very little sand.

Samples for chemical analyses were collected from the monitoring wells after evacuating a minimum of 3 times the volume of standing water in each well with a bladder pump. This was to insure that only fresh, nonstratified aquifer water was being sampled. The polyethylene tubing placed into each well for evacuation was dedicated to that well only. The depth to water and the depth of well were measured before sampling to determine the volume of water in each well using an oil/water interface meter.

Prior to and after evacuation of each well, field measurements were taken of several parameters that are usually considered controlling variables of the chemical speciation found in water quality analysis. The parameters are also signatures of the water that help determine whether the water recovered in a well is stable after evacuation, compared to the water previous to evacuation. The results of the field measurements are in Table 3. These parameters and the methods for measuring them are as follows:

- pH - A measure of the hydrogen ion concentration in the water. Measured with a Beckman 21 pH meter calibrated in the field with standard pH solutions of 4 and 7. Initial pH's were taken of water pumped from the well during purging (evacuation) and of the water collected from sampling. Water samples used for measuring pH were not kept for further chemical analyses.

- Salinity - Measures the total salt content in the water to determine whether it is fresh, brackish or saline. Measured in each borehole before purging and after sampling with a YSI #33 S-C-T meter. Neither well had saline water.

- Conductivity - An indirect measure of the total dissolved solids in solution. The measurements are in micromhos, a unit indicating the conductivity of the solution and therefore all ionized species. The micromhos units can be converted to mg/l of total dissolved solids by using a conversion factor (0.55 to 0.90) that is based on the source of the water and the types of charged chemical species that dominate the solution. Conductivity was measured the same way as salinity.

- Temperature - Measured in each borehole prior to purging but after sampling using the YSI S-C-T meter.

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Table 3

FIELD MEASUREMENTS OF PARAMETERS AT
MONITORING WELLS 2 AND 3

	MW2	MW3
Date	5/27/86	5/27/86
Time	10:00 a.m.	1:27 p.m.
Water Level	3.67'	3.72'
pH (units)	7.24	8.35
Salinity (ppt)	1.0	0.5
Conductivity (micromhos/cm)	1,500	1,300
Temperature (°C)	14	19
Immiscible Layers		
Light Phase	No	No
Dense Phase	No	No
Total Organic Vapors (ppm)	400	350
Total Organic Carbon (mg/l)	61.5	37.5

Source: Louis Berger & Associates, 1986.

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Immiscible Layer Measurements - Immiscible layers are concentrations of organic liquids that are insoluble in water and therefore form a distinct layer above the water table and/or at the bottom of a borehole. Where layers of either light or dense phase immiscibles are detected, separate samples of these layers will be taken. These measurements were made prior to purging and just before sampling with an oil/water interface sounding probe (Oil Recovery Systems - Interface Meter, Model 100EN/M) that transmits a steady beep when hitting an immiscible layer and in intermittent beep when in water.

Measurements in both monitoring wells indicated no distinct immiscible layers.

- Depth to water and depth of well measurements were made during development of each well, prior to evacuation, during recovery of the well and before and after sampling using the oil/water interface probe. Measurements were made to the nearest 0.01 foot.

All sampling of groundwater was performed using 36 inch long, teflon coated, single-bottom, check-valve bailers dedicated to each well. They were cleaned by the laboratory doing the chemical analyses and wrapped in autoclaved tinfoil. The wire used to rinse and lower each bailer was also teflon coated. The sampling procedures were as follows:

a) Each well was allowed to recover after purging, and sampling began when the water had risen to within 0.1 feet of water level prior to purging.

b) Each bailer was removed from tinfoil, tied to teflon coated wire which was connected to a circular spindle, and lowered into the corresponding well.

c) Volatile organics (VOA's) were sampled first by lowering the bottom of a bailer until it was entirely submerged below the water surface so as to sample any light phase immiscibles. Extreme care was taken when lowering and raising the bailer so as not to degas the sample. The sample was then transferred into the sample container by pushing the ball check-valve located at the bottom of the bailer upward with a finger and allowing the water to flow into the container. No air bubble or head space was left in the VOA containers.

d) The same method as (c) was used to collect samples for all other analyses but at depths in each well ranging from 18 to 48 inches below the water surface. Samples retrieved for metals analysis were first filtered through disposable 0.45 micrometer pore size cellulose acetate filters, and then stored in the appropriate containers and preserved. This is to minimize the effect that the sediment might have on the concentration of the metals in solution while the sample is awaiting analysis. The result of the analysis is reported as total dissolved metals.

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e) After a sample was collected, depth of water, salinity, conductivity and temperature were measured and recorded. After removal of all probes, the plastic cap was fitted to the top of the inner casing and the steel protective casing was locked.

The groundwater samples collected and preserved were analyzed for the 127 priority pollutants plus 40 peaks. A listing of the priority pollutants categories are provided in Table 2 of Section 3.2.1.3.

3.3 Quality Assurance

The chain of custody is a quality assurance/quality control (QA/QC) measure to provide for the integrity of the sampling and analytical process. Chain of custody procedures were carried out in accordance with NJDEP and USEPA guidelines. The chain of custody forms used for each sample are contained in Appendix C.

All data on types of chemicals and their levels reported by ETC Laboratories have been critically evaluated with respect to data acceptance criteria which include accuracy, precision, representativeness, completeness and reliability. The evaluation was done according to NJDEP's guidelines for these criteria.

The data were found to meet these criteria with a few exceptions. The data are presented in the enclosed tables. Those data which did not meet the above mentioned criteria for acceptance are flagged with USEPA's data qualifier code letters. The qualifier codes are annotated and the code letters with annotations written next to the qualified data. Definitions of codes are presented at the bottom of Tables 5, 6 and 7 showing related data. Thus, concentrations of analytes flagged with code "J" are to be considered estimated concentrations.

The samples were analyzed for 127 priority pollutants plus 40 peaks. The tables show only those compounds which were "hits" in any of the samples. Compounds not detected in any sample are not included.

Data related to the volatile organic fraction meets our quality assurance criteria except for methylene chloride. Reported levels of methylene chloride are to be treated as estimated concentrations.

Data related to acids and base/neutral extractable compounds, metals, total phenolics and total cyanides meet acceptance criteria.

All concentrations reported for pesticides and PCB's are to be considered estimated concentrations. These compounds were found in the soil samples, but not in any of the water samples (see Tables 5, 6 and 7). The laboratory had difficulty in analyzing for these parameters due to matrix interference and had to repeat extraction and analyses. However, reextraction was done past the time limit allowed by NJDEP. The laboratory will obtain a decision from USEPA/NJDEP to allow acceptance of these results as valid. In the meantime these data could be used in characterization of the site.

4.0 RESULTS OF ANALYSES AND CONCLUSIONS

The sampling area has been divided into three sections for the purpose of relating chemical results to site characteristics. Area A covers the buildings, above and below ground tanks and the oil/water trench. Monitoring well #3 is in this area. Area B encompasses the dock area, trailer storage and the storm sewer system. No monitoring well is in this area. Area C includes the shredded tire pile, part of the storm sewer system, and is directly down gradient of the drum storage area. Monitoring well #2 is located in Area C.

Results of soil and water analyses from samples taken from the BB&D property are presented in Tables 5, 6 and 7 and correspond to Areas A, B and C, respectively. Table 4 depicts the cleanup level criteria used by the NJDEP's Bureau of Industrial Site Evaluation (BISE) to determine if a cleanup action should be taken. BB&D is currently being regulated by USEPA under RCRA, but the BISE cleanup levels provide a measure against which the results may be judged. Many of the parameters do not have specific criteria to be judged by, but instead are included in the totals for a whole group of contaminants that have a single cleanup level. Other parameters, such as acid extractable organics in soils do not have any clean-up criteria. The location of the results that exceed the BISE clean-up levels are summarized in Figure 4, along with their respective parameters.

Specific levels for many of the parameters in the USEPA Priority Pollutant List (Table 2) for both soil and groundwater are currently being developed, and may be applicable to this site when they are approved in the Federal Register.

As noted in Section 3.3 all concentrations reported for pesticides and PCB's are to be considered estimated or provisional. The analysis procedures did not meet USEPA and NJDEP Quality Assurance requirements. The laboratory will either have to obtain written confirmation from these agencies of their validity or resampling and reanalysis will be undertaken at the laboratory's expense. However, for the purpose of general description of contamination at the site they are considered valid, as the infringement was of a technical nature.

As previously indicated each sample was analyzed for the 127 "priority pollutants," a list of specific chemicals, and the results were fully quantified. In addition a search was made for other chemicals present with the highest concentration. Attempts were made to identify a total of up to 40 other chemicals, including 15 volatile organics, 15 base/neutral extractables, and 10 acid extractables. These concentrations are only reported in a semiquantitative form, and therefore only represent a rough estimate of the concentrations of the chemicals found.

The full laboratory analysis reports (NJDEP Tier II format) have been reviewed by our QA Coordinator and are maintained in our document control system. They are available for review upon request.

ATTACHMENT C-23

4.1 Soils

Area A

Priority pollutant heavy metals were the most significant contaminants in all three soil samples (M1188, M1189 and M1198) in Area A. Samples M1188 and M1189 had levels of cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg) and zinc (zn) all exceeding BISE cleanup levels (Cr in sample M1188 was 99 mg/kg which is 1 mg/kg below the cleanup level). Sample M1198 had only excessive levels of lead with all other priority pollutant metals below cleanup levels.

The source of these metals may be from the impurities in the reconditioned steel drums which are removed during the incineration process. The ash from the incineration concentrates these metals which can then be leached. Other sources can be from the drum reconditioning building and overflows from the oil/water trench which also contains metal from the incinerator leachate. The levels found in LB&A's investigation are lower than those detected by the USEPA analysis of the ash pile and soils near the incinerator but consistent with those findings (see Appendix A). Where metal concentration in ash and incinerator soil was in the hundreds to thousands (mg/Kg) the soil near the settling and holding tanks was in the tens to hundreds (mg/kg) range.

Area A had surficial soils (0-24") with excessive levels of organic contaminants. The organics in high concentration were polycyclic aromatic hydrocarbons (PAHs) and phthalates from the base/neutral extraction group. The total concentration of all priority pollutant base/neutral organics exceeded 110 mg/kg (see Table 5), with the phthalates comprising over 85% of the total. When additional peaks of the non-priority pollutants are figured in the total, the diversity of organic compounds increases to include other aliphatic and monocyclic aromatic hydrocarbons besides phthalates. In sample M1188, alkanes, a group of aliphatic hydrocarbons registered at over 76 mg/kg, while total monocyclic aromatic hydrocarbons which includes the tri and dimethyl benzenes exceeded 58 mg/kg. Both of these classes of chemicals were conspicuously absent in sample M1189 which is only 30 feet south of M1188. Sample M1198, taken from the first two feet of soil of monitoring well #3, also had low levels of nonpriority pollutants, except for alkanes, which were over 2.6 mg/kg. (Note: Results of non-priority pollutants are semiquantitative and useful only in indicating their presence and general level of concentration.)

There are no BISE criteria for cleanup levels of base/neutral extractables in soil, but polycyclic aromatic hydrocarbons are either known or suspected carcinogens and are included in the range of constituents found in sample M1188. There were no other excessive levels of contaminants in any of the soil samples in Area A, except for PCB's in sample M1188, at a concentration of 19.1 mg/kg. The BISE cleanup criteria for PCB's in soils is 1-5 mg/kg while USEPA does not regulate PCBs with a concentration of less than 50 mg/kg.

TABLE 5
SUMMARY OF AREA A CHEMICAL ANALYSIS RESULTS

Sample #	M1188		M1189		M1198		M1213	M1214	M1215	
Units	ug/kg		ug/kg		ug/kg		ug/kg	ug/kg	ug/l	
Date of Submission	25-Apr		25-Apr		05-May		26-Apr	26-Apr	27-May	
Depth	0-18"		0-18"		0-2'					
Composite/Discrete	D		D		D		C	C	D	
Soil (S)/Water (W)/Sediment (X)	S		S		S		X	X	W	
VOLATILE ORGANICS										
PRIORITY POLLUTANTS										
Benzene	ND		ND		ND		NA	NA	ND	
cis-1,3-Dichloropropylene	ND		ND		ND		NA	NA	ND	
Ethylbenzene	28.10	J2	ND	UJ1	ND	UJ1	NA	NA	ND	UJ2
Methylene chloride	158		ND		ND		NA	NA	ND	
Tetrachloroethylene	ND		ND		ND		NA	NA	ND	
Toluene	33		2		ND		NA	NA	ND	
Totals	219.1		2		0		NA	NA	0	
ADDITIONAL PEAKS (SEMI-QUANTITATIVE)										
2-Methyl hexane	ND		ND		ND		NA	NA	ND	
2-Pentanone, 4-Methyl	ND		ND		ND		NA	NA	ND	
2-Propanones	ND		ND		ND		NA	NA	ND	
3-methyl benzene	ND		ND		ND		NA	NA	ND	
3-Methyl pentane	ND		ND		ND		NA	NA	ND	
4-Ethyl 2-Pentanone	ND		ND		ND		NA	NA	ND	
4-Methyl 2-Pentanones	ND		ND		ND		NA	NA	ND	
Acetone	ND		ND		ND		NA	NA	ND	
Alkanes	50		ND		ND		NA	NA	ND	
Alkyl benzene	ND		ND		ND		NA	NA	ND	
Benzene ethenyl-methyl	ND		ND		ND		NA	NA	ND	
Benzene, 1,2,3-trimethyl	ND		50		ND		NA	NA	ND	
Cycloheptane, methyl	89		ND		ND		NA	NA	ND	
Cyclohexanes, 1,1,3-trimethyl	ND		ND		ND		NA	NA	ND	
Cyclohexane, 1,1-dimethyl	76		ND		ND		NA	NA	ND	
Cyclohexane, 1,3-dimethyl	64		ND		ND		NA	NA	ND	
Cyclohexanes, 1,3-dimethyl, cis	ND		ND		ND		NA	NA	ND	
Cyclohexanes, 1,3-dimethyl,trans	ND		ND		ND		NA	NA	ND	
Cyclohexane,1,1,3-trimethyl	ND		ND		ND		NA	NA	ND	
Cyclohexane,1,2-dimethyl,cis	ND		ND		ND		NA	NA	ND	
Cyclohexane,1,2-dimethyl,trans	ND		ND		ND		NA	NA	ND	
Cyclohexane,1,3-dimethyl,trans	ND		ND		ND		NA	NA	ND	
Cyclohexane,1,4-dimethyl,cis	ND		ND		ND		NA	NA	ND	
Cyclohexane,1-ethyl-4-methyl cis	ND		ND		ND		NA	NA	ND	
Cyclohexane,1-ethyl-4-methyl trans	ND		ND		ND		NA	NA	ND	
Cyclohexanone, 3,3,5-trimethyl	ND		ND		ND		NA	NA	ND	
Cyclooctane, butyl	176		ND		ND		NA	NA	ND	
Cyclopentane, methyl	ND		ND		ND		NA	NA	ND	
Cyclopentane,1,3-dimethyl,trans	ND		ND		ND		NA	NA	ND	
Dimethyl benzenes	ND		ND		ND		NA	NA	ND	

J2= Estimated concentration due to %RDS for response factor in intial calibration higher than 30%
ND = Not Detectable
UJ1 = Estimated quantitation limit 13ug/kg
UJ2 = Estimated quantitation limit 16.3ug/l

NA = Not analyzed for this parameter

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TABLE 5 (CONTINUED)
SUMMARY OF AREA A CHEMICAL ANALYSIS RESULTS

#	M1188 ug/kg	M1189 ug/kg	M1198 ug/kg	M1213 ug/kg	M1214 ug/kg	M1215 ug/l
Submission	25-Apr 0-18"	25-Apr 0-18"	05-May 0-2'	26-Apr	26-Apr	27-May
te/Discrete	D	D	D	C	C	D
)/Water (W)/Sediment (X)	S	S	S	X	X	W
E ORGANICS ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED						
l cyclohexane	ND	ND	ND	NA	NA	ND
l cyclopentane	ND	ND	ND	NA	NA	ND
l-3-hexene	ND	ND	ND	NA	NA	ND
1,1'-oxybis	ND	ND	ND	NA	NA	ND
ethyl benzene	ND	ND	ND	NA	NA	ND
, methyl	ND	ND	ND	NA	NA	ND
rbons	ND	ND	ND	NA	NA	ND
cyclohexane	ND	ND	ND	NA	NA	ND
es	ND	ND	ND	NA	NA	ND
enes	ND	ND	ND	NA	NA	ND
, 3-methyl	ND	ND	ND	NA	NA	ND
s, methyl	ND	ND	ND	NA	NA	ND
benzene	ND	ND	ND	NA	NA	ND
	ND	ND	ND	NA	NA	ND
ACID EXTRACTABLES						
PRIORITY POLLUTANTS						
ophenol	ND	ND	ND	ND	ND	ND
hlorophenol	ND	ND	ND	ND	ND	ND
ethylphenol	230	ND	ND	ND	ND	21.9
lorophenol	ND	ND	ND	ND	ND	ND
	210	ND	ND	708	360	ND
richlorophenol	ND	ND	ND	ND	ND	ND
Totals	440	0	0	708	360	21.9
BASE/NEUTRAL EXTRACTABLES						
PRIORITY POLLUTANTS						
thene	ND	ND	ND	ND	ND	2.3
thylene	ND	ND	BMDL	ND	ND	ND
ene	510	ND	BMDL	ND	ND	ND
)anthracene	ND	ND	BMDL	ND	ND	ND
)pyrene	1,100	ND	BMDL	ND	ND	ND
)fluoranthene	2,000	ND	733	ND	ND	ND
hi)perylene	ND	ND	ND	ND	ND	ND
thylhexyl)phthalate	95,100	44,600	12,200	206,000	114,000	ND
enzyl phthalate	1,200	ND	7,520	47,600	5,400	ND
e	ND	ND	BMDL	ND	ND	ND

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TABLE 5 (CONTINUED)
SUMMARY OF AREA A CHEMICAL ANALYSIS RESULTS

Sample #	M1188	M1189	M1196	M1213	M1214	M1215
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	25-Apr	25-Apr	05-May	26-Apr	26-Apr	27-May
Depth	0-18"	0-18"	0-2'			
Composite/Discrete	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	X	X	W
BASE/NEUTRAL EXTRACTABLES, PRIORITY POLLUTANTS CONTINUED						
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND
Diethyl phthalate	ND	ND	ND	19,900	ND	ND
Dimethyl phthalate	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	ND	ND	420	48,000	4,600	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	ND	ND	ND	3,700	ND	ND
Fluoranthene	2,800	ND	BMDL	2,090	1,500	ND
Fluorene	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-c,d)pyrene	ND	ND	ND	ND	ND	ND
Isophorone	ND	ND	ND	ND	ND	ND
Naphthalene	2,000	ND	BMDL	860	4,200	ND
N-Nitrosodiphenylamine	ND	ND	9,210	1,570	ND	ND
Phenanthrene	2,200	ND	BMDL	3,500	3,100	ND
Pyrene	4,100	ND	BMDL	2,130	1,200	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	8.24
Totals	111,010	44,600	24,083	335,350	134,000	10.54
BASE/NEUTRAL/ACID EXTRACTABLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE)						
1H-Indene octahydro 2,2,4,4,7,7-hexamethyl	6,560	ND	ND	ND	ND	ND
1H-Benzo(b) fluorene	ND	ND	ND	ND	ND	ND
1H-Indene,2,3-dihydro	ND	ND	ND	ND	ND	ND
1H-Inden-5-ol,2,3-dihydro	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND
1,2,3,4-Tetramethyl benzene	3,410	ND	ND	ND	ND	ND
1,2,3-Trimethyl benzene	ND	ND	ND	ND	ND	ND
1-Methyl anthracene	ND	ND	ND	ND	ND	ND
2,6-Dimethyl nonane	ND	ND	ND	ND	9,080	ND
2-Ethyl hexanoic	ND	ND	ND	4,234	ND	ND
2-Ethyl naphthalene	ND	ND	ND	ND	ND	ND
2-hydroxy benzaldehyde	ND	ND	ND	ND	ND	ND
2-methyl 1,1'-biphenyl	ND	ND	ND	ND	ND	ND
2-Methyl anthracenes	ND	ND	ND	ND	ND	ND
2-Methyl naphthalene	ND	ND	ND	ND	ND	ND
2-Methyl phenanthrene	ND	ND	ND	ND	ND	ND
2-methyl phenol	ND	ND	ND	ND	ND	ND
2-Propenoic acid, 2-Methyl, Dodecyl ester	ND	ND	ND	3,834	ND	ND

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TABLE 5 (CONTINUED)
SUMMARY OF AREA A CHEMICAL ANALYSIS RESULTS

Sample #	M1188	M1189	M1198	M1213	M1214	M1215
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	25-Apr	25-Apr	05-May	26-Apr	26-Apr	27-May
Depth	0-18"	0-18"	0-2'			
Composite/Discrete	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	X	X	W
BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED						
3-Ethyl-2-Methyl heptane	ND	ND	ND	ND	ND	ND
3-Methyl phenanthrene	ND	ND	ND	ND	ND	ND
3-Methyl phenol	ND	ND	ND	ND	ND	ND
4-Methyl phenanthrene	ND	ND	ND	ND	ND	ND
4-Methyl phenols	ND	ND	ND	ND	ND	ND
Alkanes	76,390	ND	2,668	20,114	54,924	ND
Benzenesulfonamide, 4-methyl	ND	ND	ND	ND	ND	ND
Bicyclo(3,2,1)oct-2-ene,3-methyl-4-methylene	ND	ND	ND	ND	ND	ND
Cyclohexane,pentyl	ND	ND	ND	ND	ND	ND
Diethyl benzene	ND	ND	ND	ND	ND	ND
Dimethyl 2-pentenes	ND	2,120	ND	ND	ND	ND
Dimethyl ethyl phenol	ND	ND	ND	ND	ND	ND
Dimethyl heptane	ND	ND	ND	ND	ND	ND
Dimethyl naphthalenes	ND	ND	ND	ND	ND	ND
Dimethyl pentenes	ND	ND	ND	ND	ND	ND
Dimethyl phenanthrenes	ND	ND	ND	ND	ND	ND
Dimethyl phenols	ND	ND	ND	ND	ND	ND
Dimethyl-ethyl benzenes	ND	ND	396	ND	ND	ND
Dimethyl-ethyl phenol	ND	ND	ND	ND	ND	ND
Ethanone, 1-(4-ethyl phenyl)-ethyl	ND	ND	ND	ND	ND	ND
Ethyl benzenes	ND	ND	ND	ND	ND	ND
Ethyl methyl benzene	ND	ND	ND	ND	ND	ND
Ethyl naphthalene	ND	ND	ND	ND	ND	ND
Ethyl phenols	ND	ND	ND	ND	ND	ND
Ethyl- methyl benzenes	ND	ND	ND	ND	ND	ND
Ethyl-1,2,3-trimethyl benzene	ND	ND	ND	ND	ND	ND
Ethyl-1,2,4-trimethyl benzene	8,920	ND	ND	ND	ND	ND
Ethyl-dimethyl benzenes	9,640	ND	ND	ND	ND	ND
Ethyl-methyl benzenes	4,840	ND	1,096	ND	ND	ND
Ethyl-methyl phenols	ND	ND	ND	ND	ND	ND
Ethyl-propyl benzene	ND	ND	ND	ND	ND	ND
Hexadecanoic acid	ND	ND	ND	ND	16,062	ND
Hexanal	ND	ND	ND	ND	11,010	ND
Hydroxy benzaldehyde	ND	ND	ND	4,628	ND	ND
Methoxy benzaldehyde	ND	ND	ND	ND	ND	ND
Methyl benzenes	ND	ND	721	3,939	9,400	ND
Methyl ethyl benzene	ND	ND	ND	ND	ND	ND
Methyl Fluorenes	ND	ND	ND	ND	ND	ND
Methyl naphthalene	ND	ND	387	ND	ND	ND
Methyl phenanthrene	ND	ND	ND	ND	ND	ND
Methyl phenols	ND	ND	ND	ND	ND	ND
Methyl-ethyl benzene	ND	ND	ND	ND	ND	ND

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TABLE 5 (CONTINUED)
SUMMARY OF AREA A CHEMICAL ANALYSIS RESULTS

Sample #	M1188	M1189	M1196	M1213	M1214	M1215
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	25-Apr	25-Apr	05-May	26-Apr	26-Apr	27-May
Depth	0-18"	0-18"	0-2'			
Composite/Discrete	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	X	X	W
BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED						
Methyl-ethyl phenols	ND	ND	ND	ND	ND	ND
Methyl-methyl ethyl phenols	ND	ND	ND	ND	ND	ND
Methyl-methyl-ethyl benzenes	9,290	ND	627	ND	ND	ND
Methyl-naphthalene	ND	ND	ND	ND	ND	ND
Methyl-propyl benzenes	ND	ND	ND	ND	ND	ND
Naphthalene,decahydro,trans	ND	ND	ND	ND	ND	ND
N-propyl benzamide	ND	ND	ND	8,490	ND	ND
Phosphoric acid, triphenyl ester	ND	ND	ND	ND	ND	ND
Propyl benzenes	ND	ND	ND	ND	ND	ND
Tetrachlorobiphenyls	ND	ND	ND	ND	ND	ND
Tetradecanoic acid	ND	ND	ND	1,229	ND	ND
Tetramethyl benzenes	ND	ND	ND	ND	ND	ND
Tetramethyl butyl phenols	5,090	2,480	335	ND	ND	ND
Trichloromethene	ND	ND	ND	ND	ND	ND
Trimethyl benzenes	ND	ND	ND	ND	ND	ND
Trimethyl naphthalenes	4,950	ND	ND	ND	ND	ND
Trimethyl phenols	ND	ND	ND	ND	ND	ND
Xylenes	5,580	ND	386	ND	ND	ND
PCB						
PRIORITY POLLUTANTS						
Aroclor 1242	4,100 J1	ND	ND	ND	ND	ND
Aroclor 1254	15,000 J1	2,200 J1	3,600 J1	ND	ND	ND
Totals	19,200 J1	2,200 J1	3,600 J1	0	0	0
METALS						
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/l
PRIORITY POLLUTANTS						
Antimony	13.60	0.90	1.10	3.50	4.10	3.10
Arsenic	16.20	9.20	3.60	5.60	27.00	ND
Beryllium	2.30	0.09	ND	0.48	0.32	ND
Cadmium	11	24	ND	100	16	2.50
Chromium	99	170	ND	210	120	22.00
Copper	550	233	1.10	223	530	7.80
Lead	980	790	330	970	720	ND
Mercury	1.20	2.50	0.44	53	1.00	0.65
Nickel	84	54	ND	69	76	15
Selenium	ND	ND	0.41	ND	ND	ND

J1 = Estimated Concentration. Samples were reextracted past holding time limits as specified in 40CFR part 136

ATTACHMENT C-29

TABLE 5 (CONTINUED)
SUMMARY OF AREA A CHEMICAL ANALYSIS RESULTS

Sample #	M1188	M1189	M1198	M1213	M1214	M1215
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	25-Apr	25-Apr	05-May	26-Apr	26-Apr	27-May
Depth	0-18"	0-18"	0-2'			
Composite/Discrete	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	X	X	W
METALS, PRIORITY POLLUTANTS CONTINUED UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/L
Silver	2.80	2.70	ND	2.90	1.50	2.00
Thallium	0.48	0.76	ND	0.39	0.16	ND
Zinc	2,470	718	2.20	1,340	2,970	71.00
Totals	4,221	2,005	339	2,978	4,466	114
PESTICIDES UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/L
PRIORITY POLLUTANTS						
Beta-BHC	ND	ND	ND	24 J1	ND	ND
4,4'-DDE	ND	ND	ND	140 J1	130 J1	ND
4,4'-DDD	ND	ND	ND	ND	160 J1	ND
Endosulfan sulfate	ND	ND	ND	160 J1	34 J1	ND
Endrin aldehyde	ND	ND	ND	65 J1	ND	ND
Totals	0	0	0	389 J1	324 J1	0
PHENOLICS & CYANIDE UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L
Phenolics, Total	1.00	1.40	0.70			0.06
Cyanide, Total	1.40	1.20	1.00			<.025

J1 = Estimated concentration. Samples were reextracted past holding time limits as specified in 40CRF part 136

ATTACHMENT C-30

Sediment

Two buildings within area A were sampled for total priority pollutants plus 40 by taking sediment samples in 5 different locations of each building. The 5 sediment samples were then composited for analyses.

The composite samples from the drum reconditioning building and the boiler rooms (M1213 and M1214) also reflected high heavy metal concentrations that exceeded BISE cleanup levels for Cd, Cr, Cu, Pb, Hg and Zn. These parameters are the same metals found in the two soil samples near the 5,000 gallons settling tank and oil/water trench. Considering the high levels of heavy metals found in the soils it was not surprising to find equally high metal concentrations in the drum reconditioning building. The use of this building made it susceptible to concentration in the floor drain from the effluent produced in chemical cleaning of the drums. But the degree of contamination found in the boiler room was unexpected and indicated flagrant contamination of structures not used in operations that would be the obvious sources of contamination. One possible explanation may be that given the age of the facility (original buildings dating back to 1931 - See Section 2.4 and Figure 2), the use of buildings has changed to its present use from one that may have caused the contamination.

Regardless of sources, the heavy metals contamination is prevalent in both the soils and buildings at levels that exceed cleanup levels and indicates widespread contamination.

Sample M1213, from the floor drain of the Closed Head Reconditioning Building, had excessive concentrations of the same organic constituents found in soil sample M1188: phthalates, alkanes and lesser amounts of PAH's. Total priority pollutant base/neutral organics exceeded 300 mg/kg. The phthalates were much higher in the floor drain sample than in the soil of Area A, with bis (2-ethylhexyl)phthalate exceeding 200 mg/kg.

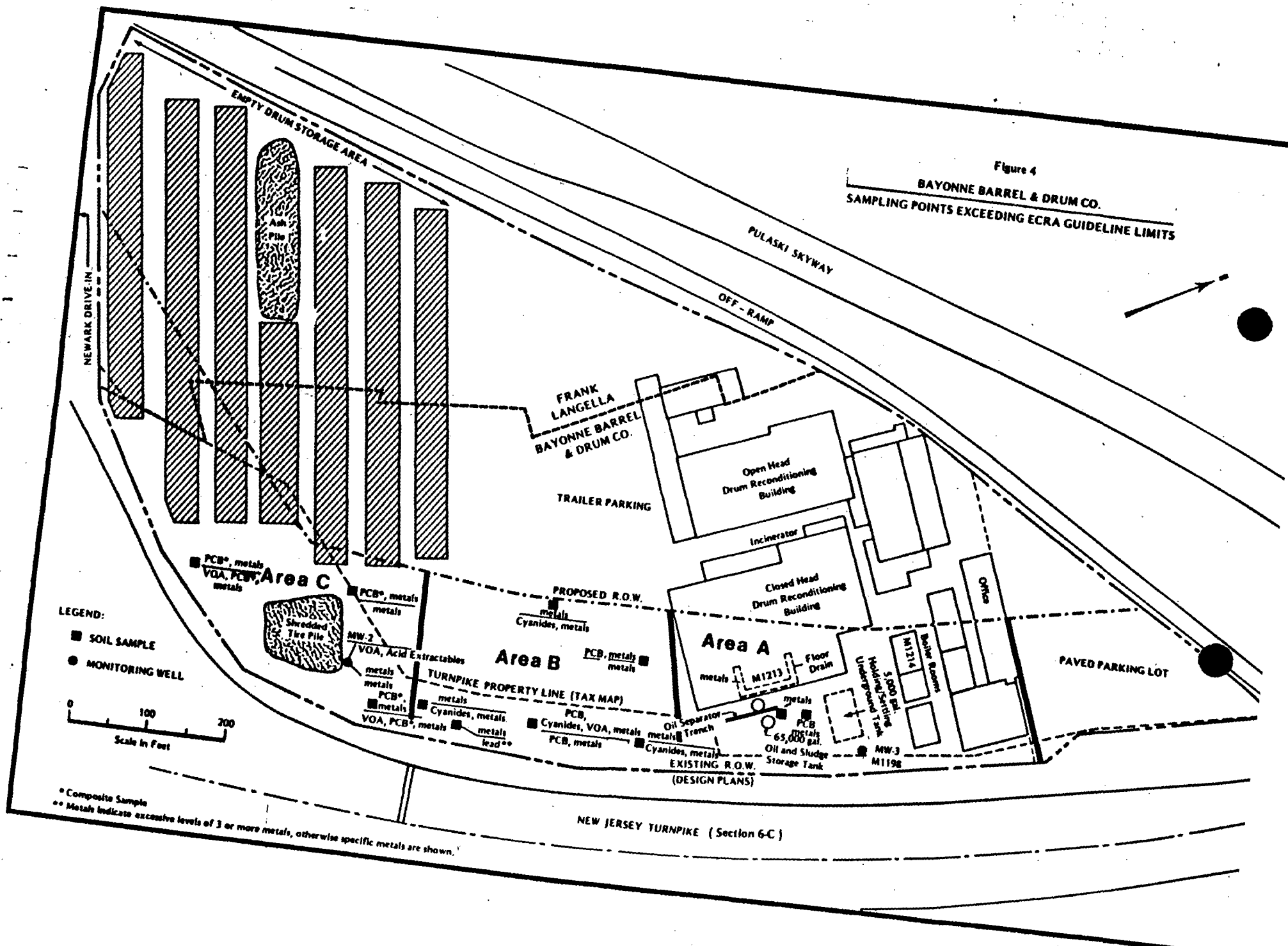
The presence of pesticides in both buildings is to be noted.

The Boiler Rooms (Sample M1214) had sediment samples taken off of their floors and walls. Though similar in constituency to the floor drain sample concentrations, total priority pollutant base/neutral organics made-up only 134 mg/kg, with phthalates being the primary constituent. Conversely, alkane concentration exceeded 54 mg/kg, as compared to 20 mg/kg for sample M1213. The pesticide concentrations were similar to those found in the floor-drain samples.

See Table 5 and Figure 4 for summary analytical results and location of excessive concentration levels, respectively.

Area B

Soils in Area B had a wide variety of contaminants from heavy metals and all organic groups, some of which exceeded the BISE cleanup levels. Area B covers the largest areal extent of the sampling program and receives runoff from the drum storage area and the tire pile, and overlays the storm sewer system. This makes it susceptible to various sources of contamination.



ATTACHMENT C-32

TABLE 6
SUMMARY OF AREA B CHEMICAL ANALYSIS RESULTS

Sample #	M2190	M2191	M2192	M2193	M2196	M2197	M2209	M2242
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Date of Submission	25-Apr	25-Apr	25-Apr	25-Apr	26-Apr	26-Apr	26-Apr	26-Apr
Depth	(-18"	18-36"	(-18"	18-36"	(-18"	18-36"	(-18"	
Composite/Discrete	D	D	D	D	D	D	C	C
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	S
VOLATILE ORGANICS								
PRIORITY POLLUTANTS								
Benzene	22,000	31,100	ND	1.6	BNDL	ND	NA	237
cis-1,3-Dichloropropylene	ND	ND	ND	ND	ND	ND	NA	ND
Ethylbenzene	243,000	408,000	5.83	ND	4.5	33.9	NA	ND
Methylene chloride	48,800 J3	91,600 J3	ND UJ3	ND	ND UJ4	ND UJ5	ND UJ6	25.9
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	NA	ND
Toluene	265,000	321,000	ND	ND	ND	15.4	NA	ND
Totals	578,800	851,700	5.83	1.6	4.5	49.3	NA	322.9
ADDITIONAL PEAKS (SEMI-QUANTITATIVE)								
2-Methyl hexane	ND	ND	ND	ND	ND	ND	ND	ND
2-Pentanone, 4-Methyl	ND	ND	ND	ND	ND	ND	ND	ND
2-Propanones	ND	ND	B	30	6	22	ND	ND
3-Methyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
3-Methyl pentane	69,000	ND	ND	ND	ND	ND	ND	ND
4-Ethyl 2-Pentanone	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl 2-Pentanones	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	ND	ND	ND	ND	ND	ND	ND	ND
Alkanes	ND	ND	ND	ND	ND	ND	ND	ND
Alkyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Benzene ethenyl-methyl	ND	ND	ND	ND	ND	57	ND	ND
Benzene, 1,2,3-trimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cycloheptane, methyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexanes, 1,1,3-trimethyl	ND	ND	17	20	ND	ND	ND	ND
Cyclohexane, 1,1-dimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane, 1,3-dimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexanes, 1,3-dimethyl, cis	ND	ND	10	ND	ND	ND	ND	ND
Cyclohexanes, 1,3-dimethyl, trans	ND	ND	9	ND	ND	ND	ND	ND
Cyclohexane, 1,1,3-trimethyl	ND	ND	ND	ND	ND	ND	ND	46
Cyclohexane, 1,2-dimethyl, cis	ND	ND	ND	ND	ND	ND	ND	37
Cyclohexane, 1,2-dimethyl, trans	ND	ND	ND	ND	ND	ND	ND	57
Cyclohexane, 1,3-dimethyl, trans	ND	ND	ND	ND	ND	ND	ND	26
Cyclohexane, 1,4-dimethyl, cis	ND	ND	ND	ND	ND	ND	ND	42
Cyclohexane, 1-ethyl-4-methyl cis	ND	ND	ND	ND	ND	ND	ND	32
Cyclohexane, 1-ethyl-4-methyl trans	ND	ND	ND	ND	ND	ND	ND	44
Cyclohexanone, 3,3,5-trimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclooctane, ethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopentane, methyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopentane, 1,3-dimethyl, trans	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl benzenes	ND	ND	ND	ND	ND	ND	ND	ND

J3 = Estimated concentrations due to greater than 25% difference between RF for initial calibration and RF for continuing calibration.
ND = Not Detectable
BNDL = Below Minimum Detection Limits
UJ3 = Estimated quantitation limit 16.4ug/kg
UJ4 = Estimated quantitation limit 27.1ug/kg
UJ5 = Estimated quantitation limit 22.9ug/kg
UJ6 = Estimated quantitation limit 17.8ug/kg

ATTACHMENT C-33

TABLE 6 (CONTINUED)
SUMMARY OF AREA B CHEMICAL ANALYSIS RESULTS

Sample #	M1190	M1191	M1192	M1193	M1196	M1197	M1209	M1242
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Date of Submission	25-Apr	25-Apr	25-Apr	25-Apr	26-Apr	26-Apr	26-Apr	26-Apr
Depth	0-18"	18-36"	0-18"	18-36"	0-18"	18-36"	0-18"	
Composite/Discrete	D	D	D	D	D	D	C	C
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	S
VOLATILE ORGANICS ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED								
dimethyl cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl cyclopentane	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl-3-hexene	ND	ND	ND	ND	ND	ND	ND	ND
Ethane, 1,1'-oxybis	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl-methyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Heptane, methyl	ND	ND	ND	ND	ND	ND	ND	ND
Hydrocarbons	ND	94,000	ND	ND	ND	ND	ND	ND
Methyl cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND
m-Xylenes	1,810,000	3,200,000	ND	ND	ND	ND	ND	ND
o&p-Xylenes	1,310,000	2,280,000	ND	ND	ND	ND	ND	ND
Pentane, 3-methyl	ND	ND	ND	ND	ND	ND	ND	ND
Pentanes, methyl	ND	ND	ND	ND	ND	ND	ND	15
Propyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND
ACID EXTRACTABLES								
PRIORITY POLLUTANTS								
2-Chlorophenol	ND	880	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	470	3,700	ND	ND	ND	ND	ND	1780
2,4-Dimethylphenol	2,850	7,410	5,090	ND	ND	ND	890	2470
Pentachlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	4,130	1,500	800	ND	BMDL	ND	ND	4000
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
Totals	7,450	13,490	5,890	0	0	0	890	8,250
BASE/NEUTRAL EXTRACTABLES								
PRIORITY POLLUTANTS								
Acenaphthene	ND	15,500	ND	ND	ND	180	200	390
Acenaphthylene	ND	3,500	ND	ND	ND	ND	120	ND
Anthracene	4,700	14,600	ND	ND	150	240	230	ND
Benzo(a)anthracene	7,300	22,200	1,900	2,600	380	530	350	1,700
Benzo(a)pyrene	4,600	18,000	2,500	3,100	1,040	680	772	2,500
Benzo(b)fluoranthene	8,450	23,000	3,900	5,700	1,180	730	1,360	4,100
Benzo(ghi)perylene	2,100	4,000	2,600	2,700	1,150	ND	814	ND
bis(2-Ethylhexyl)phthalate	250,000	186,000	7,100	7,500	11,200	2,110	56,800	75,900
Butyl benzyl phthalate	30,100	4,100	ND	ND	1,310	310	1,170	9,030
Chrysene	7,910	24,400	2,200	2,700	690	600	ND	2,100

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TABLE 6 (CONTINUED)
SUMMARY OF AREA B CHEMICAL ANALYSIS RESULTS

Sample #	M1190	M1191	M1192	M1193	M1196	M1197	M1209	M1242
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Date of Submission	25-Apr	25-Apr	25-Apr	25-Apr	28-Apr	28-Apr	28-Apr	28-Apr
Depth	0-18"	18-36"	0-18"	18-36"	0-18"	18-36"	0-18"	
Composite/Discrete	D	D	D	D	D	D	C	C
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	S
BASE/NEUTRAL EXTRACTABLES, PRIORITY POLLUTANTS CONTINUED								
Dibenzo(a,h)anthracene	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	11,800	ND	ND	ND	ND	ND	ND
Diethyl phthalate	7,550	ND	ND	ND	ND	ND	320	ND
Dimethyl phthalate	ND	ND	ND	ND	330	ND	ND	ND
Di-n-butyl phthalate	83,200	113,000 J	1,100 J	1,200 J	700	150	3,870	13,100
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	1,900	ND	ND
Di-n-octyl phthalate	4,400	ND	ND	ND	310	ND	2,060	5,400
Fluoranthene	14,900	35,900	2,100	3,900	670	1,000	490	2,400
Fluorene	7,400	29,300	ND	ND	80	130	220	1,800
Indeno(1,2,3-c,d)pyrene	1,200	3,500	2,100	2,000	877	ND	560	ND
Isophorone	ND	ND	ND	ND	600	ND	ND	ND
Naphthalene	50,800	191,000	1,200	ND	680	390	5,630	31,000
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	26,200	80,800	ND	1,900	670	1,100	966	4,200
Pyrene	19,200	56,200	2,900	4,000	866	950	590	2,700
1,2,4-Trichlorobenzene	5,600	24,700	ND	ND	ND	ND	350	2,100
Totals	575,610	861,500	29,600	37,300	22,883	10,950	78,872	158,420
BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED								
1H-Indene octahydro 2,2,4,4,7,7-hexamethyl	ND	ND	ND	ND	ND	ND	ND	ND
1H-Benzo(b) fluorene	ND	ND	ND	ND	ND	ND	ND	ND
1H-Indene,2,3-dihydro	ND	ND	ND	ND	ND	ND	ND	ND
1H-Inden-5-ol,2,3-dihydro	ND	ND	ND	ND	ND	ND	ND	ND
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3,4-Tetramethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethyl benzene	49,600	ND	ND	ND	ND	ND	ND	ND
1-Methyl anthracene	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dimethyl nonane	ND	ND	ND	ND	ND	ND	ND	ND
2-Ethyl hexanoic	ND	ND	ND	ND	ND	ND	ND	ND
2-Ethyl naphthalene	ND	ND	ND	ND	ND	ND	ND	26,501
2-hydroxy benzaldehyde	ND	ND	2,650	ND	ND	ND	ND	ND
2-methyl 1,1'-biphenyl	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl anthracenes	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
2-methyl phenol	ND	ND	9,770	ND	ND	ND	ND	ND
2-Propenoic acid, 2-Methyl, Dodecyl ester	ND	ND	ND	ND	ND	ND	ND	ND

J = Estimated concentration. QC Blank contaminated with 126ug/l of di-n-butyl phthalate

ATTACHMENT C-35

TABLE 6 (CONTINUED)
SUMMARY OF AREA B CHEMICAL ANALYSIS RESULTS

Sample #	M1190	M1191	M1192	M1193	M1196	M1197	M1209	M1242
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Date of Submission	25-Apr	25-Apr	25-Apr	25-Apr	26-Apr	26-Apr	26-Apr	26-Apr
Depth	0-18"	18-36"	0-18"	18-36"	0-18"	18-36"	0-18"	
Composite/Discrete	D	D	D	D	D	D	C	C
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	S
BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED								
3-Ethyl-2-Methyl heptane	ND	21,100	ND	ND	ND	ND	ND	ND
3-Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
3-Methyl phenol	ND	ND	ND	ND	ND	ND	ND	8,676
4-Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl phenols	ND	ND	73,500	ND	ND	ND	ND	10,771
Alkanes	196,600	243,500	17,170	ND	ND	2,241	13,350	123,250
Benzenesulfonamide, 4-methyl	ND	ND	ND	ND	378	ND	ND	ND
Bicyclo(3,2,1)oct-2-ene,3-methyl-4-methylene	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane,pentyl	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl 2-pentenes	ND	ND	7,250	ND	ND	ND	ND	ND
Dimethyl ethyl phenol	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl heptane	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl naphthalenes	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl pentenes	ND	ND	ND	ND	ND	514	ND	ND
Dimethyl phenanthrenes	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl-ethyl benzenes	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl-ethyl phenol	ND	ND	ND	ND	ND	ND	ND	58,969
Ethanone, 1-(4-ethyl phenyl)-ethyl	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl benzenes	91,300	67,700	ND	ND	564	ND	ND	53,189
Ethyl methyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl- methyl benzenes	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl-1,2,3-trimethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl-1,2,4-trimethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl-dimethyl benzenes	96,300	ND	ND	ND	773	ND	31,040	114,556
Ethyl-methyl benzenes	388,900	129,900	7,870	ND	404	875	ND	275,877
Ethyl-methyl phenols	ND	ND	ND	ND	ND	ND	ND	0
Ethyl-propyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Hexadecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND
Hexanal	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxy benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND
Methoxy benzaldehyde	ND	ND	19,600	ND	ND	ND	ND	ND
Methyl benzenes	113,000	47,400	ND	ND	3,227	2,620	ND	63,345
Methyl ethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Fluorenes	ND	ND	ND	ND	ND	ND	ND	ND
Methyl naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
Methyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-ethyl benzene	ND	45,700	ND	ND	ND	ND	ND	ND

ATTACHMENT C-36

TABLE 6 (CONTINUED)
SUMMARY OF AREA I CHEMICAL ANALYSIS RESULTS

Sample #	M1190	M1191	M1192	M1193	M1194	M1195	M1205	M1247
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Date of Submission	25-Apr	25-Apr	25-Apr	25-Apr	26-Apr	26-Apr	26-Apr	26-Apr
Depth	(0-18"	18-36"	(0-18"	18-36"	(0-18"	18-36"	(0-18"	
Composite/Discrete	D	D	D	D	D	D	C	C
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	S
BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED								
Methyl-ethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-methyl ethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-methyl-ethyl benzenes	ND	48,400	ND	3,180	ND	ND	ND	ND
Methyl-naphthalene	ND	26,300	ND	ND	ND	ND	ND	ND
Methyl-propyl benzenes	81,900	26,300	ND	ND	ND	ND	8,925	ND
Naphthalene,decahydro,trans	ND	ND	ND	ND	ND	ND	ND	ND
N-propyl benzamide	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric acid, triphenyl ester	ND	ND	ND	ND	ND	ND	ND	ND
Propyl benzenes	27,600	17,700	ND	ND	ND	ND	ND	ND
Tetrachlorobiphenyls	ND	ND	ND	ND	ND	ND	ND	ND
Tetradecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethyl benzenes	112,200	ND	ND	ND	1,182	ND	5,942	25,960
Tetramethyl butyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Trimethyl benzenes	ND	82,100	ND	ND	894	ND	ND	ND
Trimethyl naphthalenes	ND	ND	ND	ND	ND	ND	ND	ND
Trimethyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	475,000	238,700	3,600	ND	1,868	759	ND	232,560
PCB								
PRIORITY POLLUTANTS								
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	87,000 J1	73,000 J1	37,000 J1	1,400 J1	1,800 J1	140 J1	2,800 J1	1,100 J1
Totals	87,000 J1	73,000 J1	37,000 J1	1,400 J1	1,800 J1	140 J1	2,800 J1	1,100 J1
METALS UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PRIORITY POLLUTANTS								
Antimony	12.00	16.00	1.70	3.20	1.00	1.20	6.70	12.00
Arsenic	36.00	73.00	24.00	26.00	5.60	1.50	18.00	62.00
Beryllium	1.20	0.16	0.52	0.59	0.38	0.34	0.25	0.70
Cadmium	63	71	6	10	7.90	0.35	27	29
Chromium	790	590	67	96	130	10.00	305	510
Copper	1,580	870	380	430	140	34	1150	2,050
Lead	8,200	8,520	1,440	ND	1,010	1,060	2,500	5,600
Mercury	9.10	1.90	1.60	1.80	1.90	0.27	1.20	3.60
Nickel	160	110	37	5.40	24.00	6.50	110	210
Selenium	ND	ND	ND	ND	ND	ND	ND	ND

J1 = Estimated Concentration. Samples were reextracted past holding time limits as specified in 40CFR part 136

ATTACHMENT C-37

TABLE 6 (CONTINUED)
SUMMARY OF AREA B CHEMICAL ANALYSIS RESULTS

Sample #	M1190	M1191	M1192	M1193	M1196	M1197	M1209	M1242
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Date of Submission	25-Apr	25-Apr	25-Apr	25-Apr	28-Apr	28-Apr	28-Apr	28-Apr
Depth	0-18"	18-36"	0-18"	18-36"	0-18"	18-36"	0-18"	
Composite/Discrete	D	D	D	D	D	D	C	C
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	S
METALS, PRIORITY POLLUTANTS CONTINUED								
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Silver	2.80	2.70	6.40	4.20	0.69	0.22	6.40	4.40
Thallium	ND	ND	0.14	ND	0.29	0.23	0.43	ND
Zinc	6,120	4,970	1,050	1,400	640	130	2,760	12,200
Totals	16,976	15,227	3,014	1,979	1,962	1,247	6,885	20,699
PESTICIDES								
PRIORITY POLLUTANTS								
Beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND
Totals	0	0	0	0	0	0	0	0
PHENOLICS & CYANIDE								
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Phenolics, Total	13.00	0.24	0.25	0.13	0.38	0.07	1.90	5.90
Cyanide, Total	16.00	13.00	1.70	2.30	2.20	1.00	0.73	16.00

ATTACHMENT C-38

mples M1190 and M1191 were the only samples in Area B to have excessive vels of contamination from volatile organics (see Table 6 and Figure 4). 190 (0-18") and M1191 (18-36") both exceeded the clean-up levels of mg/kg tal volatile organics (VOA) used by the BISE, with total priority pollu- nt concentrations of 579 mg/kg and 852 mg/kg, respectively. There are so high concentrations of the non-priority pollutant VOA xylene (in all s isomeric forms) in samples M1190 and M1191. It is not surprising that e deeper sample had higher VOA concentrations as samples closer to the rface volatilize more easily. No other samples in Area B had concen- ations of VOAs exceeding 1 mg/kg.

mples M1190 and M1191 are also the only samples in Area B to exceed the eanup level criteria for total cyanides (12 mg/kg) with concentrations of mg/kg and 13 mg/kg, respectively.

ere was no consistency in the results with respect to depth, as some ganic parameters were higher in the 0-18" interval than in the 18-36" terval, while others were higher in the lower depth interval than in the rface interval. For example, in samples M1190 and M1191, most of the iority pollutant base/neutral organic parameters were higher in M1191 an in M1190, while for alkanes (a nonpriority pollutant), xylenes and her non-priority pollutant base/neutrals, the reverse was true. The same true for M1192, M1193 and M1196/M1197 (which is upgradient of the M1190/ 191), but with lower concentrations.

e alkane concentrations in the borings of samples M1192/M1193 and M1196/ 197 were likewise inconsistent, but to a greater degree. For M1192 -18") the alkane concentration was 17.2 mg/kg while from 18"-36" (M1193) ere was no detectable concentration. The opposite is true for samples 196 and M1197: M1196 had no detectable levels of alkane while M1197 had 2 mg/kg. Samples M1190/M1191, the boring for which is only 75 feet south that for M1196/M1197, had high concentrations in both intervals.

CB's also greatly exceeded cleanup levels of 1-5 mg/kg in samples M1190, 1191 and M1192 with concentrations of 87 mg/kg, 73 mg/kg and 37 mg/kg, espectively. Samples M1190 and M1191 also exceed USEPA trigger levels 50 mg/kg.

eavy metal concentrations that exceeded BISE cleanup levels were detected all soil samples in Area B. The metals were the same as those found in ea A but with the addition of Arsenic (As), nickel (Ni), and silver (Ag). e highest levels were found in samples M1190/M1191 with Pb (8,200/8,520 g/kg), Cr (790/590 mg/kg), Cd (63/71 mg/kg), Hg (9.1/1.9 mg/kg), Zn (6,120 ,970 mg/kg), and Cu (1,580/870 mg/kg) well above other discrete soil mples concentrations. Only composite sample M1242 (18-36") had higher evels of Cu and Zn.

e extensive metal contamination found throughout Area B is most likely om leaching of the ash pile and runoff from the drum storage area. Area is in closer proximity to both these sources than Area A thereby esulting in higher contaminant levels.

ATTACHMENT G-39

TABLE 7
SUMMARY OF AREA C CHEMICAL ANALYSIS RESULTS

Sample #	M1194	M1195	M1203	M1205	M1206	M1207	M1208	M1217
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	28-Apr	28-Apr	06-May	06-May	06-May	28-Apr	28-Apr	27-May
Depth	0-18"	18-36"	3-5'	13-15'	17.5-19	0-18"	18-36"	
Composite/Discrete	D	D	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	W
VOLATILE ORGANICS								
PRIORITY POLLUTANTS								
Benzene	ND	ND	85.3	5.6	ND	4.53	1,100	5.58
cis-1,3-Dichloropropylene	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	333	46	111	19.9 J2	44,300 J3	15.9
Methylene chloride	ND UJ7	ND UJ8	34	ND	44	46.9	5,280	ND UJ9
Tetrachloroethylene	ND	ND	6.8	ND	ND	ND	ND	ND
Toluene	2.1	ND	318	58	85	25.2	218,000	76.6
Totals	2.1	0	777.1	109.6	240	96.53	268,680	98.08
VOLATILE ORGANICS, ADDITIONAL PEAKS (SEMI-QUANTITATIVE)								
2-Methyl hexane	ND	ND	295	ND	ND	ND	ND	ND
2-Pentanone, 4-Methyl	ND	ND	ND	ND	ND	ND	ND	323
2-Propanones	ND	ND	ND	71	ND	1,050	ND	64
3-methyl benzene	ND	ND	ND	ND	ND	ND	62,000	ND
3-Methyl pentane	ND	ND	ND	ND	ND	ND	ND	ND
4-Ethyl 2-Pentanone	ND	ND	572	ND	ND	ND	ND	ND
4-Methyl 2-Pentanones	ND	ND	ND	1,023	240	ND	ND	ND
Acetone	ND	ND	ND	ND	ND	ND	ND	ND
Alkanes	ND	ND	409	ND	ND	ND	ND	ND
Alkyl benzene	ND	ND	ND	ND	ND	ND	42,000	ND
Benzene ethenyl-methyl	ND	ND	ND	ND	ND	ND	ND	ND
Benzene, 1,2,3-trimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cycloheptane, methyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexanes, 1,1,3-trimethyl	ND	ND	ND	ND	ND	160	ND	ND
Cyclohexane, 1,1-dimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane, 1,3-dimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexanes, 1,3-dimethyl, cis	ND	ND	ND	ND	ND	94	ND	ND
Cyclohexanes, 1,3-dimethyl,trans	ND	ND	ND	ND	ND	53	ND	ND
Cyclohexane,1,1,3-trimethyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane,1,2-dimethyl,cis	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane,1,2-dimethyl,trans	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane,1,3-dimethyl,trans	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane,1,4-dimethyl,cis	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane,1-ethyl-4-methyl cis	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane,1-ethyl-4-methyl trans	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexanone, 3,3,5-trimethyl	ND	ND	ND	ND	ND	ND	ND	36
Cyclooctane, butyl	ND	ND	ND	ND	ND	ND	ND	ND
Cyclopentane, methyl	ND	ND	ND	ND	ND	994	ND	ND
Cyclopentane,1,3-dimethyl,trans	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl benzenes	ND	ND	ND	ND	ND	847	ND	ND

J2 = Estimated concentration due to %RSD for response factor in initial calibration higher than 30%
J3 = Estimated concentration due to greater than 25% difference between RF for initial calibration and RF for continuing calibration
ND = Not Detectable
BMDL = Below Minimum Detection Limits
UJ7 = Estimated quantitation limit 16.4ug/kg
UJ8 = Estimated quantitation limit 16.9ug/kg
UJ9 = Estimated quantitation limit 11.0ug/l

ATTACHMENT C-40

TABLE 7 (CONTINUED)
SUMMARY OF AREA C CHEMICAL ANALYSIS RESULTS

Sample #	M1194	M1195	M1203	M1205	M1206	M1207	M1208	M1217
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	26-Apr	26-Apr	06-May	06-May	06-May	26-Apr	26-Apr	27-May
Depth	0-18"	18-36"	3-5'	13-15'	17.5-19	0-18"	18-36"	
Composite/Discrete	D	D	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	W
BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED								
3-Ethyl-2-Methyl heptane	ND	ND	ND	ND	ND	ND	ND	ND
3-Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
3-Methyl phenol	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Alkanes	2,870	ND	53,000	ND	937	ND	2,790	ND
Benzenesulfonamide, 4-methyl	ND	ND	ND	ND	ND	ND	ND	ND
Bicyclo(3,2,1)oct-2-ene,3-methyl-4-methylene	ND	ND	ND	ND	ND	ND	2,870	ND
Cyclohexane,pentyl	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl benzene	ND	ND	ND	ND	ND	ND	2,560	ND
Dimethyl 2-pentenes	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl ethyl phenol	ND	ND	ND	1,400	ND	ND	ND	ND
Dimethyl heptane	1,830	ND	ND	ND	ND	ND	ND	ND
Dimethyl naphthalenes	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl pentenes	ND	165,770	ND	ND	ND	ND	ND	ND
Dimethyl phenanthrenes	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phenols	ND	ND	6,860	1,090	6,019	ND	ND	ND
Dimethyl-ethyl benzenes	ND	ND	29,000	ND	ND	ND	ND	ND
Dimethyl-ethyl phenol	ND	ND	ND	ND	ND	ND	ND	ND
Ethanone, 1-(4-ethyl phenyl)-ethyl	ND	ND	ND	21,210	ND	ND	ND	ND
Ethyl benzenes	ND	ND	ND	ND	ND	270	2,450	ND
Ethyl methyl benzene	ND	ND	ND	ND	ND	ND	16,730	ND
Ethyl naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl phenols	ND	ND	6,890	11,410	ND	ND	ND	ND
Ethyl- methyl benzenes	ND	ND	ND	ND	ND	ND	10,770	ND
Ethyl-1,2,3-trimethyl benzene	ND	ND	ND	ND	ND	ND	1,980	ND
Ethyl-1,2,4-trimethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl-dimethyl benzenes	ND	ND	ND	ND	ND	ND	16,100	ND
Ethyl-methyl benzenes	ND	ND	299,300	ND	3,290	315	ND	ND
Ethyl-methyl phenols	ND	ND	17,880	16,280	4,210	ND	ND	ND
Ethyl-propyl benzene	ND	ND	35,100	ND	ND	ND	ND	ND
Hexadecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND
Hexanal	ND	ND	ND	ND	ND	ND	ND	ND
Hydroxy benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND
Methoxy benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND
Methyl benzenes	13,280	11,920	ND	ND	ND	1,585	7,780	ND
Methyl ethyl benzene	ND	ND	ND	ND	ND	ND	1,375	ND
Methyl Fluorenes	ND	ND	ND	ND	ND	ND	ND	ND
Methyl naphthalene	ND	ND	ND	ND	1,190	ND	ND	ND
Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
Methyl phenols	ND	ND	13,100	26,070	9,870	ND	ND	ND
Methyl-ethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND

ATTACHMENT C-43

TABLE 7 (CONTINUED)
SUMMARY OF AREA C CHEMICAL ANALYSIS RESULTS

Sample #	M1194	M1195	M1203	M1205	M1206	M1207	M1208	M1217
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	28-Apr	28-Apr	06-May	06-May	06-May	28-Apr	28-Apr	27-May
Depth	0-18"	18-36"	3-5'	13-15'	17.5-19	0-18"	18-36"	
Composite/Discrete	D	D	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	W
VOLATILE ORGANICS ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED								
dimethyl cyclohexane	ND	ND	179	ND	ND	ND	ND	ND
Dimethyl cyclopentane	ND	ND	218	ND	ND	ND	ND	ND
Dimethyl-3-hexene	ND	ND	412	ND	ND	ND	ND	ND
Ethane, 1,1'-oxybis	ND	ND	ND	ND	ND	ND	ND	13
Ethyl-methyl benzene	ND	ND	ND	ND	ND	ND	ND	21
Heptane, methyl	ND	ND	ND	ND	ND	115	ND	ND
Hydrocarbons	ND	ND	ND	ND	ND	ND	13,000	ND
Methyl cyclohexane	ND	ND	2,078	ND	ND	ND	ND	ND
m-Xylenes	ND	ND	ND	ND	ND	ND	1,010,000	ND
o&p-Xylenes	ND	ND	ND	ND	ND	ND	769,000	ND
Pentane, 3-methyl	ND	ND	ND	ND	ND	ND	ND	ND
Pentanes, methyl	ND	ND	ND	ND	ND	9,550	ND	ND
Propyl benzene	ND	ND	ND	ND	ND	ND	187,000	ND
Xylenes	ND	ND	7,105	91	1,535	ND	ND	326
ACID EXTRACTABLES								
PRIORITY POLLUTANTS								
2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	ND	ND	188,000	79,900	11,500	ND	3,600	860
Pentachlorophenol	ND	ND	ND	ND	ND	ND	1,000	ND
Phenol	ND	ND	27,700	58,900	750	ND	17,600	877
2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	650	ND
Totals	0	0	215,700	138,800	12,250	0	22,850	1,737
BASE/NEUTRAL EXTRACTABLES								
PRIORITY POLLUTANTS								
Acenaphthene	ND	ND	BMDL	19,600	ND	ND	ND	9.2
Acenaphthylene	ND	ND	ND	ND	ND	250	ND	ND
Anthracene	ND	ND	BMDL	15,300	310	140	ND	ND
Benzo(a)anthracene	ND	ND	BMDL	16,800	300	500	ND	ND
Benzo(a)pyrene	ND	ND	10,100	11,000	510	994	ND	ND
Benzo(b)fluoranthene	ND	ND	ND	ND	ND	1,200	ND	ND
Benzo(ghi)perylene	ND	ND	BMDL	BMDL	350	895	ND	ND
bis(2-Ethylheryl)phthalate	4,100	1,700	61,700	ND	1,500	4,620	411,000	ND
Butyl benzyl phthalate	ND	ND	BMDL	ND	ND	110	26,500	ND
Chrysene	ND	ND	BMDL	ND	330	670	ND	ND

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TABLE 7 (CONTINUED)
SUMMARY OF AREA C CHEMICAL ANALYSIS RESULTS

Sample #	M1194	M1195	M1203	M1205	M1206	M1207	M1208	M1217
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	28-Apr	28-Apr	06-May	06-May	06-May	28-Apr	28-Apr	27-May
Depth	0-18"	18-36"	3-5'	13-15'	17.5-19	0-18"	18-36"	
Composite/Discrete	D	D	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	W
BASE/NEUTRAL EXTRACTABLES, PRIORITY POLLUTANTS CONTINUED								
Dibenzo(a,h)anthracene	ND	ND	ND	BMDL	ND	140	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	ND	ND	ND	ND	ND	ND	11,500	ND
Dimethyl phthalate	ND	ND	ND	ND	ND	ND	22,000	ND
Di-n-butyl phthalate	ND	ND	11,300	45,300	480	96	87,900	ND
2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	ND	ND	ND	ND	ND	ND	15,700	ND
Fluoranthene	ND	ND	12,200	32,000	630	460	3,400	ND
Fluorene	ND	ND	BMDL	19,300	360	ND	2,800	3.15
Indeno(1,2,3-c,d)pyrene	ND	ND	BMDL	BMDL	280	640	ND	ND
Isophorone	ND	ND	ND	ND	ND	260	ND	ND
Naphthalene	ND	ND	44,700	13,700	1,660	240	179,000	16.3
N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	ND	ND	18,900	48,400	1,150	430	8,180	4.9
Pyrene	ND	ND	11,700	25,300	530	894	4,700	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	6,200	ND
Totals	4,100	1,700	170,600	246,700	8,390	12,539	778,880	34
BASE/NEUTRAL/ACID EXTRACTABLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE)								
1H-Indene octahydro 2,2,4,4,7,7-hexamethyl	ND	ND	ND	ND	ND	ND	ND	ND
1H-Benzo(b) fluorene	ND	ND	ND	ND	ND	ND	ND	ND
1H-Indene,2,3-dihydro	ND	ND	ND	ND	ND	ND	2,250	ND
1H-Inden-5-ol,2,3-dihydro	ND	ND	19,700	ND	ND	ND	ND	ND
1,1'-Biphenyl	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3,4-Tetramethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trimethyl benzene	ND	ND	ND	ND	ND	ND	ND	ND
1-Methyl anthracene	ND	ND	ND	ND	ND	ND	ND	ND
2,6-Dimethyl nonane	ND	ND	ND	ND	ND	ND	ND	ND
2-Ethyl hexanoic	ND	ND	ND	ND	ND	ND	ND	ND
2-Ethyl naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-hydroxy benzaldehyde	ND	ND	ND	ND	ND	ND	ND	ND
2-methyl 1,1'-biphenyl	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl anthracenes	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND
2-methyl phenol	ND	ND	ND	ND	ND	ND	ND	ND
2-Propenoic acid, 2-Methyl, Dodecyl ester	ND	ND	ND	ND	ND	ND	ND	ND

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TABLE 7 (CONTINUED)
SUMMARY OF AREA C CHEMICAL ANALYSIS RESULTS

Sample #	M1194	M1195	M1203	M1205	M1206	M1207	M1208	M1217
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	28-Apr	28-Apr	06-May	06-May	06-May	28-Apr	28-Apr	22-May
Depth	0-18"	18-36"	3-5'	13-15'	17.5-19	0-18"	18-36"	
Composite/Discrete	D	D	D	D	D	C	C	D
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	W
BASE/NEUTRAL/ACID EXTRACTIBLES, ADDITIONAL PEAKS (SEMI-QUANTITATIVE) CONTINUED								
Methyl-ethyl phenols	ND	ND	2,080	ND	918	ND	ND	ND
Methyl-methyl ethyl phenols	ND	ND	ND	3,920	ND	ND	ND	ND
Methyl-methyl-ethyl benzenes	ND	ND	ND	ND	896	ND	1,750	ND
Methyl-naphthalene	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-propyl benzenes	ND	ND	ND	ND	ND	ND	4,805	ND
Naphthalene,decahydro,trans	ND	ND	ND	ND	ND	ND	ND	ND
N-propyl benzamide	ND	ND	ND	ND	ND	ND	ND	ND
Phosphoric acid, triphenyl ester	ND	ND	ND	2,890	ND	ND	ND	ND
Propyl benzenes	ND	ND	ND	ND	ND	ND	4,700	ND
Tetrachlorobiphenyls	ND	ND	ND	ND	ND	922	ND	ND
Tetradecanoic acid	ND	ND	ND	ND	ND	ND	ND	ND
Tetramethyl benzenes	ND	ND	57,700	ND	ND	ND	4,350	ND
Tetramethyl butyl phenols	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	1,530	ND	ND	ND	ND	ND	ND
Trimethyl benzenes	ND	ND	ND	ND	ND	491	20,410	ND
Trimethyl naphthalenes	ND	ND	ND	ND	ND	ND	ND	ND
Trimethyl phenols	ND	ND	2,590	2,900	2,490	ND	ND	ND
Xylenes	ND	ND	98,900	9,370	1,050	740	26,000	ND
PCB								
PRIORITY POLLUTANTS								
Aroclor 1242	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1254	500 J1	79 J1	ND	ND	1,100 J1	5,300 J1	50,000 J1	ND
Totals	500 J1	79 J1	0	0	1,100 J1	5,300 J1	50,000 J1	0
METALS								
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L
PRIORITY POLLUTANTS								
Antimony	0.90	0.20	19.00	ND	ND	5.20	6.70	2.60
Arsenic	4.50	3.70	11.00	5.90	1.30	14.00	7.70	2.00
Beryllium	0.16	0.14	ND	ND	ND	0.32	0.49	ND
Cadmium	0.49	ND	0.28	ND	ND	9.90	12	ND
Chromium	19	9.90	3.30	1.10	ND	130	280	2.30
Copper	29	23	4.80	1.60	ND	250	350	6.30
Lead	42	43	2,760	350	90	1,060	1,980	ND
Mercury	0.39	0.10	1.30	1.90	0.05	2.00	1.30	ND
Nickel	7.40	5.20	ND	0.30	ND	35	57	22
Selenium	ND	ND	3.90	0.32	ND	0.60	1.40	ND

J1 = Estimated Concentration. Samples were reextracted past holding time limits as specified in QAPP page 12c

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TABLE 7
SUMMARY OF AREA C CHEMICAL ANALYSIS RESULTS

Sample #	M1194	M1195	M1203	M1205	M1206	M1207	M1208	M1217
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Date of Submission	28-Apr	28-Apr	06-May	06-May	06-May	28-Apr	28-Apr	27-May
Depth	0-18"	18-36"	3-5'	13-15'	17.5-19	0-18"	18-36"	
Composite/Discrete	D	D	D	D	D	C	C	I
Soil (S)/Water (W)/Sediment (X)	S	S	S	S	S	S	S	W
METALS, PRIORITY POLLUTANTS CONTINUED								
UNITS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	ug/L
Silver	0.18	0.11	ND	ND	ND	1.10	0.99	ND
Thallium	0.43	2.30	ND	ND	ND	0.33	0.33	ND
Zinc	67	49	18.00	3.70	ND	705	2,200	69.00
Totals	172	137	2,822	365	91	2,213	4,898	106
PESTICIDES								
PRIORITY POLLUTANTS								
Beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan sulfate	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	ND	ND	ND	ND	ND	ND	ND	ND
Totals	0	0	0	0	0	0	0	0
PHENOLICS & CYANIDE								
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L
Phenolics, Total	0.11	0.12	0.40	1700	0.30	0.62	0.47	16.30
Cyanide, Total	1.80	0.69	0.90	0.50	<.05	2.60	8.80	0.08

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andomness of these results indicates that the current site operations not be the major source of contamination. Previous land-use (see on 2.4) activities may have been caused by subsurface contamination was then covered with fill of questionable cleanliness. This makes it sible to discern target-to-source relationships or to infer that con- ation is defined by the existing boundaries of Bayonne Barrel and Drum.

Area C

oil samples in Area C, as in Areas A and B, had concentrations that d the BISE cleanup criteria for volatile organic, heavy metals and plus high levels of acid extractable organics, phenolics, and a ty of base/neutral organics. See Table 7 and Figure 4 for the results e analyses.

site sample M1208 (18-36") had the highest level of VOAs with a total ntration of 2,351.7 mg/kg, whereas M1207 (0-18") had less than 12 mg/kg. results include the non-priority pollutant VOAs.

hree soil samples from monitoring well #2 (M1203, M1205 and M1206) had total VOAs exceeding the 1 mg/kg cleanup level. The 3-5' sample)3) had 11 mg/kg, while the samples from 13-15' and 17.5-19' had VOA concentrations of only 1-2 mg/kg. All three samples from well #2 had high acid extractable organic concentrations that decreased with ı. The two main parameters were 2, 4-dimethylphenol and phenol, while phenolics in sample 1205 (13-15') measured at 1,700 mg/kg.

metal concentrations in the first two soil samples from monitoring #2 exceeded BISE cleanup levels for lead and mercury. The lead con- ation was significantly less for the 13 to 15 foot sample (M1205) than he 3 to 5 foot layer (M1203) and both lead and mercury totally absent the 17.5 to 19 foot sample (M1206). The mercury concentrations were ignificantly different from sample M1203 (1.3 mg/kg) to sample M1205 mg/kg).

composite soil samples (M1207/M1208) had excessive levels of cadmium, nium, copper, mercury, lead and zinc. Lead concentrations ranged from) 20 times the cleanup level of 100 mg/kg. In contast to the monitor- vell soil samples the composite samples had higher metal concentrations ıe lower sample interval (18-36 inches) than for the surface soil le (0-18 inches). Though both composite samples are above the upper- monitoring well soil sample. Since compositing does not allow for cing a specific sample to a contaminant source it can be safely pro- d that like the rest of the site, metal contamination is from leaching ıe ash pile and runoff from the drum storage area.

netal contamination does not appear to have migrated below the water e to any great extent but not enough evidence is available to discern a entration decrease with depth relationship. As groundwater on the site

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did not possess excessive levels of metals it can be inferred that the metals are tightly bound to the sediment under existing pH and redox (reduction/oxidation) conditions.

Base/neutral organic concentrations were equally as high as elsewhere in the study area, but with some differences. The phthalates especially bis(2-ethyhexyl)phthalate, were greater than 6 mg/kg in sample M1203 (3'-5'), not detectable in sample M1205 (13'-15'), but at 17.5'-19 their concentration rose to 1.5 mg/kg. Also for the composite samples M1207/ M1208, the upper composite (0-18") has a bis(2ethylhexyl) phthalate concentration of 4.6 mg/kg and a lower composite (18-36") concentration of 411 mg/kg.

Discrete samples M1194/M1195 were conspicuously void of high concentrations of contaminants found in the other Area C samples. Except possibly for the base/ neutral organic, methyl benzene, there were no other contaminant levels of concern even heavy metals. Samples M1194/M1195 were obtained farther south than any other discrete samples, and are upgradient from both the ash and tire piles and the runoff from the drum storage area.

PCBs exceeded clean-up levels for both the upper and lower depth intervals of composite samples M1207/M1208, with the lower sample being almost ten times higher in concentration than the upper (50 mg/kg vs. 5.3 mg/kg).

4.2 Groundwater

The water samples collected on May 27, 1986 from monitoring well #2 and 3 were analyzed for Full Priority Pollutants Plus Forty. The BISE cleanup levels for groundwater, as presented in Table 4, are much stricter than for soil. This is because mobility for off-site contamination is much greater for groundwater than for soil, and the pathways for the water's uptake by fauna and flora, is more efficient.

Area A

Monitoring well #3 in Area A does not exceed the cleanup levels for any parameter.

Area B

There was no monitoring well located in Area B.

Area C

The results of monitoring well #2 are in sharp contrast to those of monitoring well #3. MW #2 contained excessive levels of volatile organics, acid extractable organics, and total phenolics. The volatile organic fraction was derived mainly from xylene; 4-methyl, 2-pentanone; and toluene, all of which are solvents in industrial applications and components in the

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refinery of petroleum products. Taking the additional non-priority pollutant peaks into consideration greatly increases the total concentration of volatiles. The total concentration of both priority and nonpriority pollutants was over 98 ug/l, far in excess of the 10 ug/l cleanup level.

The total acid extractable organics concentration was 1,737 ug/l, with 2,4-dimethylphenol and phenol being the only contributors. Again, this far exceeds the cleanup level of 50 ug/l.

Total phenolics which is measured by a different method than for acid extractable phenols, was 16.3 mg/l. The criteria for this compound and most of the heavy metals and pesticides is established by the Bureau of Groundwater Quality Management in N.J.A.C. 7:9-6(c) and are presented in Table 4.

The groundwater quality criteria are applicable to the groundwater of the study area because the total dissolved solids concentration is between 500 mg/l and 10,000 mg/l, which is the main criteria for classifying groundwater. Conductivity measurements listed in Table 3 indicate total dissolved solid concentrations in this range. The Brunswick Shale is the primary aquifer underlying the site and has been subjected to a wide variety of contamination from industrial sources, infiltration of urban runoff, salt-water intrusion and reductions in recharge. Additionally, the Passaic River has also been subjected to upgradient sources of contamination that infiltrates the Brunswick Shale Aquifer and also receives discharge from the aquifer due to tidal affects. This pervasive pollution may result in the BISE deciding not to subject this portion of the aquifer to the cleanup guidelines listed in Table 4. No formal declaration of such an exclusion has been made public at the time of writing.

The results of the groundwater analyses do not exhibit pervasive on-site contamination. Monitoring well #3 is uncontaminated while monitoring well #2 has fairly high concentrations of phenolic compounds and volatile organics. This indicates that the sources of contamination are upgradient of monitoring well #2, (i.e., the old ash pile, drum storage area, tire pile, and other off-site sources) and that groundwater flows generally eastward instead of northeastward. Monitoring wells #2 and #3 had very similar water levels (3.67 and 3.72 feet, respectively), which made it impossible to delineate a hydraulic gradient, especially since the data has not been corrected for tidal influences. A larger number of measurements needs to be made during low and high tides to correct for tidal affects. If measurements indicate the same hydraulic heads (water levels), then it is likely that groundwater passing through monitoring well #2 does not flow near monitoring well #3.

It is also apparent that many of the pollutants in the soils have not mobilized to the groundwater, especially the base/neutral extractable organics, heavy metals and PCB fractions. Volatile organics, being a mobile group of chemicals, are detected in the groundwater but not nearly at the levels found in the soil. The reason for this may be that the more mobile, water soluble constituents have already been flushed out of the soil, as the contamination has been deposited there over many years. The less water soluble substances, such as the base/neutral extractables and PCBs are not

mobile and have partition coefficients that do not permit phase changes from soil to water at any discernable concentration. The immiscible (insoluble in water) chemicals are more tightly bound to the sediment where they accumulate over time at high concentrations. As previously mentioned in Section 4.1 the metals also appear tightly bound to the sediment and not mobilizing into the water column.

The contamination found in the lower soil layers (below the surface) indicates that historical sources are a major contributor, and that the low levels found in the groundwater are not due to the lack of time needed for the above ground sources of contamination (drums, storage tanks, ash pile) to leach to the water table. This does not necessarily reduce the magnitude of existing on-site sources, but it does express the need for a more regional and historical explanation of the contamination.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: May 16, 1984

SUBJECT: Bayonne Barrel and Drum RCRA Sampling Results (NJD009871401)

FROM: Louis DiGuardia, Geologist 5/16/84
Source Monitoring Section

TO: William K. Sawyer, Attorney
Waste and Toxic Substances Branch

Thru: John Ciancia, Chief
Source Monitoring Section

Richard D. Spear, Chief
Surveillance and Monitoring Branch

On February 17, 1984 a RCRA sampling survey was conducted at Bayonne Barrel and Drum by Joseph Cosentino, Karen Egnot, Steven Hale, Brian Kovak and myself. This survey was conducted at the request of the Waste and Toxic Substances Branch to determine if any actions were taken by Bayonne Barrel and Drum in order to comply with the complaint and compliance order issued May 20, 1982.

The facility located at 150 Raymond Boulevard in Newark, New Jersey was formerly in the business of cleaning and reconditioning dirty and damaged drums. The facility encompasses an area of approximately 20 acres. At the time of the inspection, operations had ceased and the company had filed for bankrupcy.

Drum cleaning operations formerly involved both closed head and open head drums. In closed head cleaning, chains and a caustic solution were used to wash out previous material in the drums. The spent solution drained through an oil-water separator into a 5,000 gallon under ground holding/settling tank and was then pumped into a 60,000 gallon above ground holding/settling tank. The liquid was decanted to the sewer under a permit to the Passaic Valley Sewage Commission. Open head drums were placed on a conveyor belt and moved through an incinerator which burned residue out of the inside. This residue material was collected in two subsurface holding/settling tanks. Approximately 40,000 lbs of incinerator ash and sludge was generated monthly.

Samples were taken from the following areas of concern:

1) Under ground 5,000 gallon holding/settling tank

Sampling #65189 - aqueous sample collected from the tank.
Sampling #65190 - composite soil sample collected from the area around the tank.

ATTACHMENT D-1

2) Oil/Water Separator

Sample #65188 - aqueous sample collected from oil separator trench.

3) Subsurface tank near incinerator

Sample #65191 - aqueous sample collected from the subsurface tank.
Sample #65192 - composite soil sample near subsurface tank.

4) Incinerator ash waste pile

Sample #65184 - composite sample taken from ash pile
Sample #65185 - " " " " " "
Sample #65186 - " " " " " "
Sample #65187 - composite soil sample taken around ash pile

Sampling equipment and containers were prepared according to EPA standard procedures prior to sampling. A total of nine (9) samples were taken, three (3) aqueous, three (3) soil, and three (3) from the ash pile.

Aqueous samples were analyzed for RCRA characteristics (ignitability and corrosivity) and non-volatile (NVOA) and purgeable (POA) organic priority pollutants. Soil and ash samples were analyzed for the characteristics of EP toxicity (metals, herbicides and pesticides) as defined in RCRA, as well as metal analysis, and priority pollutants (NVOA, POA). All analyses were performed in EPA's Edison, New Jersey laboratory. EPA standard procedures were followed for the collection of samples throughout the survey.

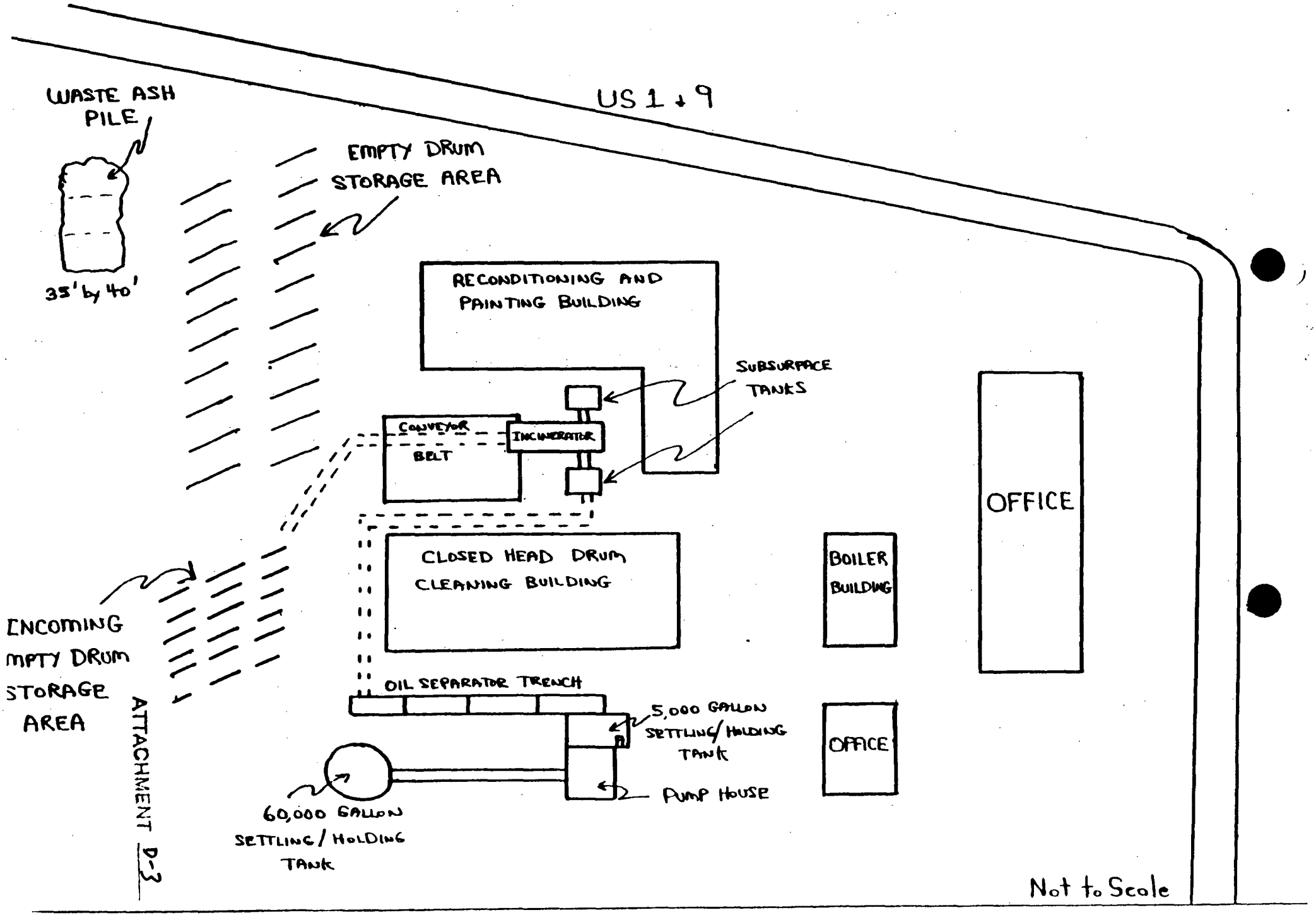
Sample results are given in Tables I thru VI. Results indicate that all samples contained a number of organic compounds. In the incinerator ash waste pile, EP toxicity limits for metals were exceeded for both cadmium and lead. Also, the metals scan showed high levels of heavy metal contamination in all ash and soil samples.

In addition to the above analysis, PCB's in measurable quantities were detected in sample #65187, soil by ash pile.

Attachments:
Figure I - Map of Facilities Grounds
Figure II - Sample Location Map
Tables I-VI - Analytical Results
Appendix I - Photographs
Appendix II - Receipt of Samples

ATTACHMENT D-2

Figure I - Map of Facility Grounds



ATTACHMENT D-3

Table I

Comparison of Waste Analysis to Characteristics of Corrosivity and Ignitability

Parameter	Maximum Allowable Limit	65188	65189	65191
Ignitability	> 140°F	> 140°F	> 140°F	> 140°F
Corrosivity	> 2.5 S.U.	*	*	6.93 S.U.

S.U. - Standard Units

65188 - Oil Separator
65189 - 5000 Gallon Tank
65191 - Subsurface Tank by Incinerator

* - No Analysis Performed

ATTACHMENT D-4

Comparison of Sample Analysis to Characteristic of EP Toxicity

Parameter	Maximum Concentration for EP Toxicity mg/l	65184 mg/l	65185 mg/l	65186 mg/l	65187 mg/l	65191 mg/l	65192 mg/l
Arsenic	5.0	.02K	.02K	.02K	.02K	.02K	.02K
Barium	100.0	4.0	5.3	1.3	1.5	.16	1.7
Cadmium	1.0	.99	1.2	.17	.08	.002K	.04
Chromium	5.0	.02J	.01J	.04	.008K	.02J	.08J
Lead	5.0	7.6	10.0	2.4	.25	.04	.10
Mercury	0.2	.0002K	.0002K	.0002K	.001	.0002K	.0002
Selenium	1.0	.008K	.02J	.008K	.008K	.009J	.008K
Silver	5.0	.002K	.002J	.002K	.002J	.002K	.002K
Endrin	.02	.000008K	.000008K	.000008K	.000008K	.000008k	.00000
Lindane	.4	.00003	.00004	.00023	.00066	.00002	.00000
Methoxychlor	10.0	.00038	.00008K	.00328	.01100	.00054	.0005
2,4,-D	10.0	.0003K	.0003K	.0073	.0080	.0003K	.0003
Silvex	1.0	.00007K	.00007K	.00007K	.00007K	.00007K	.00007
Toxophene	0.5	.00035K	.00035K	.00035K	.00035K	.00035K	.0003

K = Actual valve less than valve given
J = Estimated valve

65184, 65185, 65186 - Ash Pile
65187 - Soil by Ash Pile
65191 - Subsurface Tank Near Incinerator
65192 - Soil by Subburface Tank Near Incinerator

ATTACHMENT D-5

Table III

Results of Metals Analysis on Samples

Parameter	65184 mg/kg	65185 mg/kg	65186 mg/kg	65187 mg/kg	65192 mg/kg
Silver	3K	3J	3K	3K	3K
Arsenic	7.5	6.6	3J	23	7.0
Beryllium	1J	1K	1K	1K	1K
Cadmium	160	120	84	59	13
Chromium	2900	1800	3300	650	1200
Copper	3300	2400	1100	1000	1100
Mercury	12	.5J	21	27	7.4
Lead	21,000	13,000	17,000	4500	2700
Nickel	250	250	79	99	850
Antimony	.8K	.8K	.8K	.8K	.8K
Selenium	.9J	5.1	.8K	4.2	2J
Thallium	.8K	.8K	.8K	.8K	.8K
Zinc	3400	3800	3500	2300	1900

K = Actual valve less than valve given
J = Estimated valve

65184, 65185, 65186 - Ash Pile
65187 - Soil by Ash Pile
65192 - Soil by Subsurface Tank Near Incinerator

ATTACHMENT D-6

Table IV

Results of Organics Analysis on Samples

Organic Compounds	65188 ug/l	65189 ug/l	65191 ug/l
Fluoranthene		90J	
Isophoronnne	1800J		1300
Nephthalene	1500J	1400	
Bis(2-ethylhexyl) phthalate	13,000	6900	
Butyl benzly phthalate		1100	
Di-n-butyl phthalate	3800J	1800	
Fluorene		70J	
Phenanthrene	2500J	290	
Pyrene		60J	
Phenol			110J
Toluene			4900

J = Estimated valve
K = Actual valve less than valve given

65188 - Oil Separator
65189 - 5,000 Gallon Tank
65191 - Subsurface Tank [illegible]or

ATTACHMENT D-7

Table Va

Results of Organic Analysis [illegible] Samples

Organic Compounds	65184 ug/kg	65185 ug/kg	65186 ug/kg	65187 ug/kg	65190 ug/kg	65192 ug/kg
Acenaphthene			4300J	2500J	1400J	
1,2,4-Trichlorobenzene			8400	1200J		
1,2-Dichlorabenzene		730				
1,4-Dichlorobenzene		240				
1,2-Diphenylhydrazine	3200J		11000	1900J	1500J	2300J
Fluoranthene	2600J	280	15000	12000	12000	3700J
Isophorane	92000	22000	250000	27000		25000
Naphthalene	110000	8300	180000	18000	22000	12000
N-nitrosodiphenyulamine	20000	120	1700J	2000J	4800J	780J
Bis(2-ethylhexyl)phthalatel	800000	11000	1200000	990000	1200000	21000
Butyl benzyl phthalate	370000	2100	1200000	210000	400000	20000
Di-n-butyl phthalate	450000	2100	330000	110000	280000	28000
Di-n-octyl phthalate	5700J	1200	7200	[illegible]		770J
Diethylphthalate	9700	400				
Dimethylphthalate	24000					
Acenaphthylene	[illegible]	160		1800J		3100J
Anthracene	2300J	100	8000	5000J		1400J
Fluorene	2400J	57K	7400	3200J	3300J	1600J
Phenanthrene	12000	900	32000	17000	28000	7000
Pyrene	3600J	260	14000	15000	9000	4700J
Phenol	80000	170	46000	5800J		4700J

J = Estimated valve
K = Actual valve less than valve given

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Table Vb

Results of Organic Analysis on Samples

Organic Compounds	65184 ug/kg/	65185 ug/kg	65186 ug/kg	65187 ug/kg	65190 ug/kg	651 ug/
Benzene	160	130	480		15	
1,2-Dichloroethane	46		88	36		
1,1,1-Trichloroethane	58	380	7000	350	15	
1,1-Dichloroethane	320	67	500	16		
1,1,2-Trichloroethane	1300		5000	660		
Chloroform	47	120	160	23		
1,1-dichloroethylene	68		400	13		
1,2-dichloropropane		18K				
Ethylbenzene	3200	1900	65000	120	580	
Methylene Chloride	10000	4600	8700	1500		
Tetrachloroethylene	1800	1300	2600	460	100	
Toluene	28000	11[illegible]	320000	630	1700	
Trichloroethylene	2200	1200	8100	2[illegible]	19	
Vinyl Chloride	1600		150			

J = Estimated valve
K = Actual valve less than value given

65184, 65185, 65186 - Ash pile
65187 - Soil by Ash Pile
65190 - Soil by 5,000 Gallon Tank
65192 - Soil by Subsurface Tank Near Incinerator

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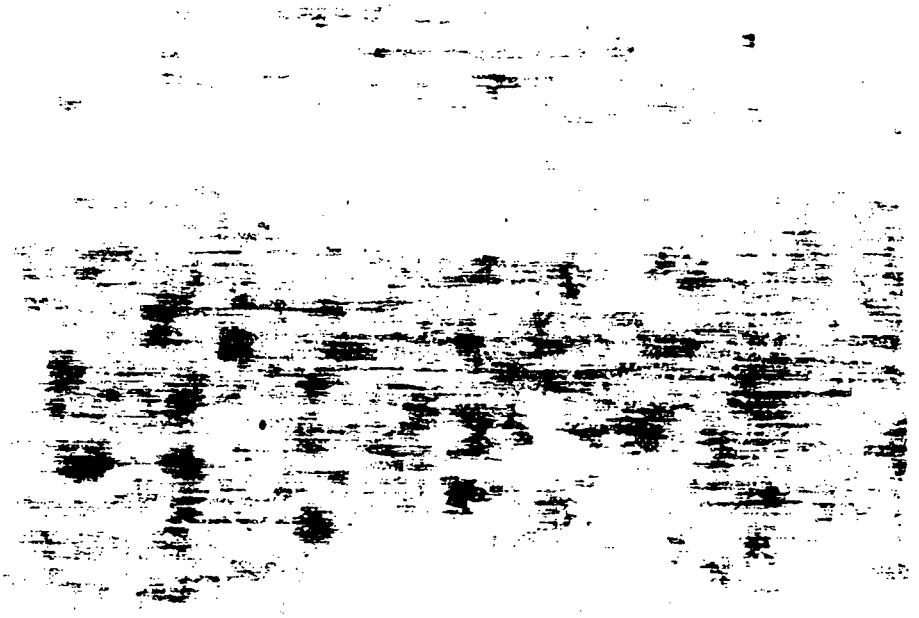
Table VI

Results for PCB Analysis

PCB	65187
Aroclor 1248	67.2 mg/kg
Aroclor 1254	117.5 mg/kg

65187 - Composite soil sample by ash pile



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